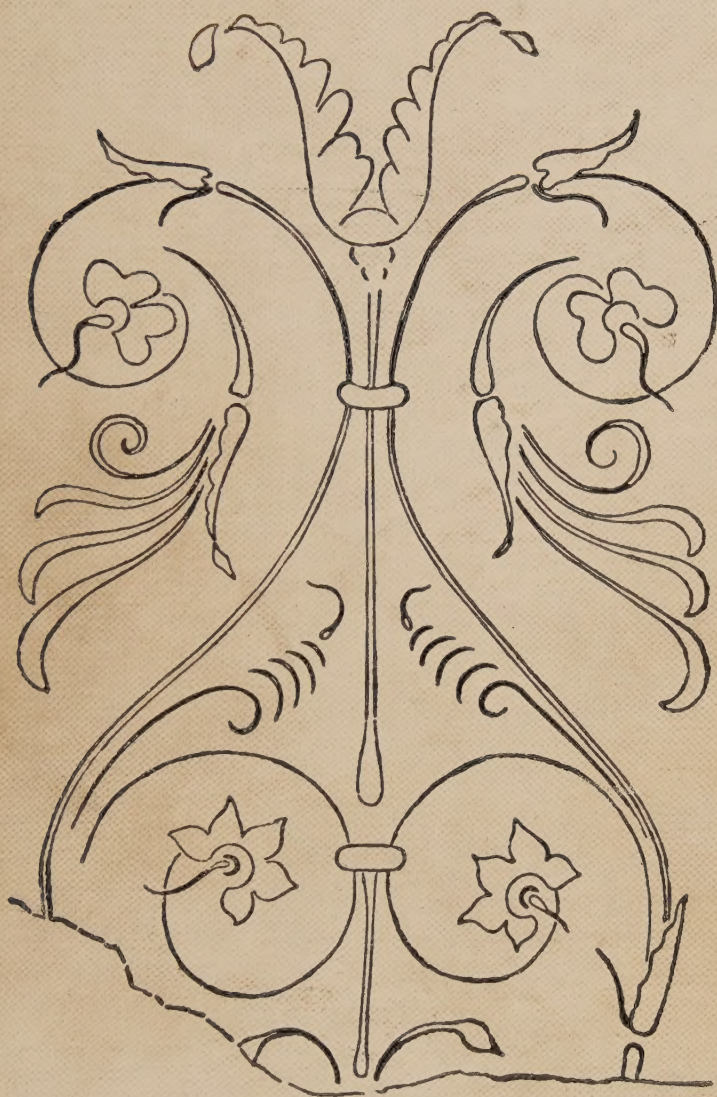




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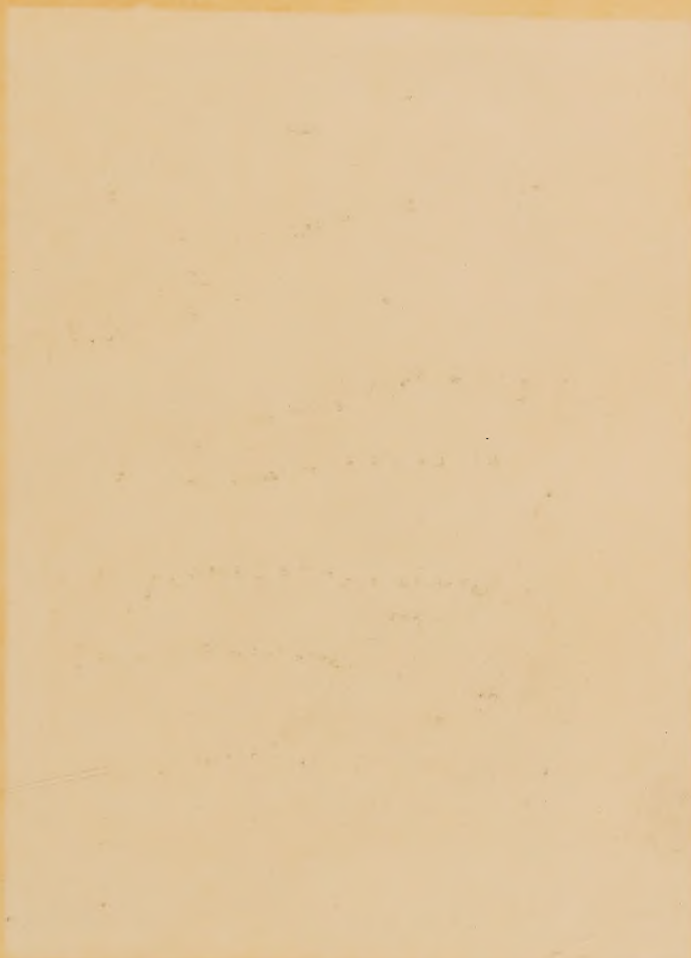
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PAUSILYPON

THE IMPERIAL VILLA NEAR NAPLES

WITH A DESCRIPTION OF THE SUBMERGED
FORESHORE AND WITH OBSERVATIONS ON
THE TOMB OF VIRGIL AND ON OTHER ROMAN
ANTIQUITIES ON POSILIPO

BY

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SOCIETIES AND OF MAGDALEN COLLEGE, OXFORD

With a Map, Two Coloured Plates, and 196 other Illustrations

OXFORD

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1913

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TO
HIS MOST GRACIOUS MAJESTY
KING VICTOR EMMANUEL III
THIS DESCRIPTION OF A COUNTRY VILLA
FORMERLY OWNED BY HIS PREDECESSORS IN ITALY
THE EMPERORS OF ROME
IS BY HIS SPECIAL PERMISSION
MOST RESPECTFULLY AND HUMBLY
DEDICATED

PREFACE

THE primary object of this work is to provide students of Archaeology with a comprehensive description, as complete as possible, of the extant remains of the Imperial Villa on Posilipo. With this aim the site was surveyed, an inventory of the antiquities taken and the results of researches, carried on in vacations between the years 1893 and 1907, combined with an account of what little may be gleaned from ancient writers and with the records of previous investigators. To all this I have added a *résumé* of my discoveries of the nearer submarine antiquities, previously described in *Earth-movements in the Bay of Naples*, both because they formed an integral part of the Imperial Villa and because that book, now nearly out of print, is likely to become rare. Those studies are still the only ones in the domain of submarine archaeology that have been published, but the recent rumour of the finding of a submerged Greek town on Pharos Bank off the Island of Lemnos in the Ægean seems to indicate that there may be other and wider areas for research.

No description of the Pausilypon has yet appeared in English, nor indeed are the Italian accounts much more than meagre reports on the early excavations of di Pietro. It has been our good fortune to find there a classical site of first-rate importance almost untouched by modern scientific archaeologists. To many it is less attractive because the portable antiquities have been pilfered: the local scholars and antiquaries are so fully taken up with the amount of work still to be done in Pompeii and on other Campanian sites, that they cannot extend their operations; yet in point of importance the site of Pausilypon is second to none in all that classic region, and is worthy of the closest and most scientific study and investigation.

Some apology may be thought necessary for the amount of constructional detail and for the numerous measurements with which the text bristles, but in a first investigation it is impossible to judge what detail may prove to be important and what may not; and in this case much will assuredly be destroyed before the next survey is ever made. My chief aim throughout has been truth and accuracy, and many of the measurements have been verified on subsequent visits, but I am only too well aware that many errors must have remained undetected, and now I am no longer in a position to check any of the statements.

My opportunities for the prosecution of these studies were very

exceptional for an Englishman in Italy. The most important of the sites were in the possession of friends and fellow countrymen. I had the advantage of being able to make my home on the spot, to have the use of boats of good construction, to secure the ready advice of experts, and to preserve amicable relations with the Neapolitan fishermen, a jealous class of men who might otherwise have viewed our proceedings with a lively suspicion.

I gladly take this opportunity of paying a tribute of gratitude to all those who afforded these facilities, particularly to my father-in-law the late Mr. Neville-Rolfe, H.B.M. Consul-General for South Italy, and to the Earl of Rosebery in whose beautiful villa on Posilipo we lived, and whose Neapolitan library, put at my disposal, was of the greatest help; but, when looking out over the sunken foreshore of the Villa, what wouldn't we have given for five minutes' chat with one of Lord Rosebery's Struldbrugs¹ whose undimmed memory might bridge the abyss of time and reconstruct for us the scene as Virgil might have seen it! I must also express my obligations to my kind friend the late Mr. Nelson Foley and to Signor Acampora, the proprietors of the Gaiola Islands and of the buildings of the Imperial Villa on the mainland, to Master Innes Foley for showing me several interesting fragments of terra-cotta or marble that his quick eye had perceived in the heaps of débris and which he had hoarded under the appropriate name of 'keeping-stuff', and to my wife for wading through the proof-sheets.

The plans, maps, photographs and drawings have mostly been made by myself, but those which have been borrowed from others are acknowledged in the text. Thanks are due to the Council of the Society of Antiquaries for permitting me to borrow the illustrations to my previous papers published in *Archæologia* in 1903 and 1912 respectively. The expenses of part of the investigation, including that of the Baths, were met by a grant from the Craven Fund of Oxford University in 1907, while the President and Fellows of Magdalen College very generously contributed towards the cost of reproduction of the illustrations: indeed without their assistance this work would not have been completed. Nor while acknowledging various sources of assistance must those friends be forgotten who have promised to subscribe for copies of this volume, without their help I should fare but sorrowfully.

MAGDALEN COLLEGE, OXFORD.

June 23, 1913.

¹ 'The Struldbrug. A Rectorial Address delivered to the Students of St. Andrews, September 14, 1911, on the occasion of the five hundredth anniversary of the foundation of the University' by Lord Rosebery. Privately printed 1911.

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INTRODUCTORY

THE sweep of the coast of the Bay of Naples between the promontories of Misenum and Minerva is interrupted by but one important headland, which still retains the ancient name of Pausilypon or Posilipo. Without going so far as to accept a Greek name as conclusive evidence of the site of a Greek settlement, it may fairly be urged that the position of this headland, situate as it is so far to the windward of the head of the bay, is a very favourable one geographically, and would certainly not have been overlooked by the early Greek colonists when they were selecting sites for their townships. There are reasons for the view that the early colony of Parthenope or Palaepolis, the predecessor of Naples, may have been established here.

Tradition takes us further back still, to cave-dwelling Cumaei, remembered for their tunnellings; but we have no definite record of antiquities on Posilipo belonging to that hazy past.

The principal Roman buildings date from imperial times, and are connected by history and tradition with Vedius Pollio, Virgil, Augustus, and also with Hadrian. In recent years the fame of the antiquities of Posilipo has been obscured by the discoveries of the more perfectly preserved treasures of Pompeii and Herculaneum, yet it should be borne in mind that while the name of Pompeii is known to us from Roman literature only as a name in a bald list of Campanian villages, that of Pausilypon is associated with the greatest of Roman emperors and poets.

In our survey of the principal antiquities on Posilipo we shall include the buildings of the adjoining Regions of Gaiola and Marechiano, now partly beneath the sea, the submerged buildings of the Rosebery Region, the roadways and tunnels of Sejanus and Posilipo, the tombs, the stone quarries, and the harbour and its buildings.

The movements of the land which brought many of these buildings under water appear to have taken place between the fifth and the twelfth centuries. They affected a wide area, including, as we have been able to show, the whole of the coast of Campania and Lucania, and, in the Bay of Naples at any rate, have involved a change of level



FIG. 1. THE WESTERN CLIFFS OF POSILIPO.

of 40 feet in a downward direction, followed by one of 20 feet in an upward direction.

The Imperial Villa of Augustus, the Pausilypum, the principal subject of this memoir, is situated on a spot the charms of which are hardly surpassed anywhere in this locality, though its beauty is so famed that it has passed into proverb.

It was placed at the south-west extremity of Posilipo, the long green promontory which seems, when viewed from the city of Naples,

to mark the end of the bay, so completely does it shut out the promontories and islands beyond. The hill-ridge of Posilipo constitutes a natural boundary between the town and that region of burnt rocks whose soils testify to the battle-fields of the giants of subterranean fire and water, the Phlegraean Fields.

Along the shore of the eastern or Naples side of Posilipo the sea ripples upon the grey sands of tiny coves and at the foot of the intervening headlands of tufa rock which slope gently, verdure clad; and the same gentle features continue where the coastline, bending at the point or 'capo', trends south-west for a mile; then at the Gaiola there is an abrupt change, and the coast, running due west, is exposed to the full onslaught of the scirocco: it meets the enemy with serried front, falling deep and precipitous as a buttressed wall into the sea. Here, where the character of the coast changes, the buildings of the Villa stood, sloping down to the sea on the one side, dominating the cliff on the other. A cluster of ruins crowns a prominent rock still associated with the name of Virgil, the 'Scoglio di Virgilio'. His rock overhangs the islets of the 'Gaiola' (= *caveola*), which in Roman times were one with the mainland and part of a low promontory extending for a quarter of a mile out into the sea. These, together with the wider foreshore, were all covered with numerous buildings.

The space occupied is not large, hardly more than 16 acres, yet few ancient sites have more natural beauties than the Pausilypon; on one side of the hill the giddy precipices fall sheer into the rippling waters of the cliff-bound Bay of Trentaremi; on the other, is the luxuriant fertility of the smiling valley of Gaiola. Here, untilled ridges clad in wild copse oak; there, neat rows of carefully tended vines, and beyond all, the more distant views over the blue sea: strung out in an unrivalled sweep are Vesuvius and the hills of Sorrento, Capri, Nisida, Misenum, and Ischia. Sometimes in clear weather against the sunset sky may be seen the rock isle of Ponza.

It is by no means easy to reconstruct with accuracy a picture of the landscape as the Romans saw it, or of the complex of buildings with which they crowned the heights. On the western side the buildings have shared the fate of the cliffs on which they stood, have crumbled with them and slid with landslips into the sea: a few remaining ruins are in constant peril on walls of rock undermined by quarry-caves of mysterious interest, in which the sea ebbs and flows with hollow gurgles far into the heart of the hill.

Inland to the east the ancient valley-bed has been filled up with

soil washed down from higher grounds and is now cultivated. On level sites the fallen débris of buildings may be found lying by their foundations; of those which have fallen into the sea no trace remains.

But if we miss in these ruins the precision of outline to be found in Pompeii, we have on the other hand natural beauties with which Pompeii cannot compare.

The scenery is lovely, every ten yards gives a new landscape, rocks mingle with foliage on the hill slopes, a charming chaos of crags and trees; crumbling walls half draped with ivy, capped with genista and lentiscus, and linked with long, twining wreaths of bryony; in spring orchids and anemones are bright like jewels among the grasses: the vegetation is luxuriant and lovely at all seasons. The tufa cliffs though high and barren have a beauty of their own in the variety of shading that time has laid on their surface, in their rugged height, and in the tints of water of varied depths at their feet.

It is remarkable that a site with such varied beauties and interests should exist so near a large town and yet have remained completely out of the world. It is only within the last few years that new houses have sprung up, and that older ones have been again inhabited. A vivid picture of the former desolation of the place is given by the Duke of Buckingham, who visited Posilipo in April, 1828, 'A lonely hermit is now the only inhabitant of the site of the luxurious Roman's proud domain. Where millions were spent in enjoyment, a begging friar is the only specimen of mortality; and on the spot where the festive shouts and the classic songs of thousands were raised in honour of their princely entertainer, a mendicant asks for alms to support a wretched existence. On the shelves of the lonely rocks on which stands the low-browed hermitage, with its simple cross and figures of Franciscan friars cut in stone before its door, we saw the hermit watching the passing vessel, and giving his solitary blessing to the fishermen as their barks glided by his abode.'

Since that date the hermit has disappeared, his hermitage has been turned into a cottage: ragged children play where he fasted and prayed, but a wooden effigy of St. Francis survives, and it will perhaps be long before modern ideas sweep this descendant of a Roman sea-god from his crag. Yet to this very isolation is due that it is possible to make out anything of the ancient buildings at all. Ground plans can for the most part be revealed by excavation, but the superficial treasures have been long removed not only by the

systematic search of antiquity-hunters, but also by the incessant pilferings of the tenders of the woods and vineyards.

The unlettered ploughboy wins
The casual treasure from the furrowed soil.

Still the ground is always worth looking over and especially after heavy rain, when films of moisture polish the fragments of precious marbles and once again revive their decorative colours.

HISTORY OF THE SITE

‘BUT,’ some objector will ask, ‘what evidence is there that this site is really that of the Augustan Pausilypum?’ Frankly, we have no proof: there are no inscriptions or boundary stones, but we have tradition. There is no other site in the vicinity with buildings of like importance, and, what is more, we were fortunate enough to find evidence that a part of the property was in the imperial possession at the time of Hadrian. The presumption is that he succeeded to it by inheritance. But we must not anticipate history by the conclusions of archaeology.

The Villa is known to us from a passage in Pliny,¹ who praises it as ‘a faire house of retreat and pleasure called Pausilypum, in Campania not far from Naples’: but such are the unexpected turns in a reputation, that it has been remembered not for the supreme beauty of its position, nor for the luxurious perfection of its architecture, but as having been the scene of an inhuman display of callousness by the first owner, one Vedius Pollio, who with Mopsus the Lydian and with the grandfather of Agamemnon has often been held up as a monster of cruelty for having caused his slaves to be rent and torn by fish.

Vedius Pollio, a Roman freedman, was a courtier, and a great favourite of Augustus. ‘He devised experiments of cruelty by means of this creature (*muraena*); for he caused certain slaves condemned to die, to be put into the stewes where these muraenes were kept, to be eaten and devoured by them: not that there were not wilde beasts ynow upon the land for this feat, but because he tooke pleasure to behold a man torne and pluckt in pieces all at once: which pleasant sight he could not see by any other beast upon the land.’²

On one occasion when Augustus was a guest at Pausilypum a *crystallinum* or glass vessel was broken by one of the slaves. The wretch would assuredly have paid the penalty had he not begged his

¹ *Nat. Hist.* ix. 53.

² Dr. Holland’s translation of Pliny ix. 23.

life of the Emperor, who not only granted the petition, but caused all his host's glass vessels to be smashed and, instead of the culprit, to be thrown into the fish-tanks, where the fragments may still be lying for the joy of future archaeologists.

This story, which has perhaps as much foundation in fact as any other item of *chronique scandaleuse*, was current in Roman Society, and Seneca in a brochure, *De Clementia*, intended for the perusal of Nero, asks, though not foreseeing the grim humour of addressing the question to that particular prince, 'Who could fail to execrate such a monster as this Vedius Pollio, beyond even the aversion felt by his ill-starred slaves, or to deem a wretch who could fatten fish upon living men, himself worthy of ten thousand deaths?'

But though no respecter of human life, Pollio would appear to have spared no trouble or expense for all that affected the welfare of his fish, and it is not likely that he would be behindhand in the knowledge of the art of pisciculture which was thriving exceedingly in his day.

Like many others, the fish-tanks of Pollio were probably divided by partitions so that such fish as lived in a state of enmity might be kept apart. Notorious among these were the mullet and the sea-pike which 'hate one another and be ever at deadly war', and the conger and the lamprey 'which gnaw off one anothers taile'. Special arrangements would have been made for the renewal, aeration, and cooling or warming of the water, and for the provision of shady grots in which the fish might lie when, in dog days, the direct rays of the sun beat strongly.

Lucullus is said to have been even more extravagant with his pisciculture at the neighbouring villa, the Neapolitanum, nearer Naples. He made a cutting through a mountain to let in an arm of the sea into his fish-pools, the doing whereof cost him more money than the house itself which he there had built. After his death his fish sold for three million sesterces, or about £8,000.

We have no record that Pollio was as attached to any of his fish as Hortensius at Bauli, who 'could not hold but weep for love' of a lamprey which died in his pool, or that he decked his fish with golden ear-rings as did Antonia the wife of Drusus. These fish lovers, says Cicero, 'deemed no moment of their lives more happy than when the creatures first came to eat out of their hands.' But it is certain that in the Pausilypon aquaria, fish thrived remarkably well, and some reached an age not often surpassed by fish living in captivity; one of the fish dying sixty years after it had been put in by Vedius Pollio,

and the fish-pools had become the property of Caesar: two more of the same age and same kind were left, which lived still longer.¹

Pollio made a will by which at his death in 15 B.C. the Pausilypon estate passed to Augustus, who also appears to have acquired the Neapolitanum of Lucullus. And so during the first and second centuries most of the finest and largest villas round about Puteoli, Baiae, and Misenum passed into the possession of the Crown either by inheritance or by confiscation. Augustus himself appears to have resided for lengthy periods in or near Naples, and for part of the time at all events the Pausilypon property was in the hands of *procuratores*, the name of one of whom **M. VLPIVS EVPHRATES** is preserved to us in an inscription. That the property was still in the imperial possession in the second century A.D. is indicated by a leaden water-pipe, which was found in the upper baths, stamped with the name and title of Hadrian.

The associations of Virgil with Pausilypum are of a more legendary character. History throws no light upon his visits to the Augustan Villa, and any glimmer of recollection of the great poet which might have persisted through the Roman period has paled before the false lights of necromancy which have gathered round Virgil, the great magician of the Dark Ages.

It is foreign to our present purpose to discuss the various traditions concerning Virgil and his magical works, but it should be mentioned that many of the stories about him are believed at the present day as implicitly as ever. Not long ago an old fisherman is reported to have told the following story concerning the ruins commonly known as the 'Scuola di Virgilio'. 'Sit on that wall,' said the old man; 'that is where Virgil used to sit. One often saw him there with his book in his hand, he was a handsome, fresh-looking man; he knew how with his magic to preserve his youth, these walls were covered with circles and lines. He used to come here with Prince Marcellus and teach him the secrets of the spirit world. Often in the wildest storms, when no fisherman would have dared to go out, they used to put to sea in a boat. No rower was ever afraid when Virgil was with him; the fiercer the storm, the better he liked to be there. Often he sat up there on the mountain and looked out towards the gulf. Many of his books he wrote there. No doubt they were prophecies which he wrote, for there was never a storm but he foretold its coming. Then he visited the gardeners and field labourers and gave

¹ Pliny ix. 53.

them good advice,¹ and taught them when to sow their corn. Often when cloud and storm were coming down from Vesuvius he would turn them back with a powerful spell, and often he would spend whole nights with his face towards the mountain when the lightnings were beginning to flash about its head, perhaps in silent converse with its spirits. There had long been talk of making a road from Naples over Posilipo; he came to our aid, and in one night his spirits had built the road through the cave. Another time he helped us in a wonderful way; the gnats had become as great a plague here as they were in Egypt in the days of Moses. So he made a great golden fly, which rose at his command into the air and drove all the gnats away. So too once all the wells and fountains had become infested with leeches; he made a golden leech, threw it into a well and the plague was stayed.' It is not easy to believe that a people to whom these stories have meant so much, should have forgotten the site of the grave of their hero, especially as at a later period the very presence of his grave was believed to be intimately connected with the welfare of the city. But the consideration of this subject as well as of his tunnelling must be reserved for the appropriate chapters.

We were not without hope of finding some graffito upon a wall which might have further corroborated what is already known concerning the extraordinary popularity of Virgil in the neighbourhood of Naples, witness the numerous quotations from the *Aeneid* on Pompeian walls, many of which were undoubtedly due to the fact that the works of Virgil were used as reading-books for schoolboys at an early date.²

Almost certain it is that his poems were recited,³ and the dramatized versions of parts of them were acted either in odeons or in theatres. We know, for instance, that a Virgilian pantomime, *Turnus*, had found such favour with Nero that he vowed he would perform it himself in the event of his escaping from his troubles.⁴

The first owner of the property in more recent times of whom we have any record as having interested himself in the local antiquities was a Greek gentleman, Antonio Paleologo,⁵ who flourished in the

¹ Virgil possessed an estate near Nola (Aulus Gellius). A garden in which he grew medicinal plants was said to have been situated on Monte Vergine near Avella—originally known as Mons Vergilianus.

² 'Primus dicitur Latine ex tempore disputasse, primusque Virgilium et alios poetas novos praelegere coepisse.' Suetonius, *De Gramm. et Rhett.* 16.

³ 'Auditis in theatro Virgilio versibus,' Tac. *Dial. de Oratt.* 13. 7.

⁴ Suet. vi. 54.

⁵ Celano 9th day.

sixteenth century, and who decorated his Posilipan villa at Marechiano with statues and Greek and Roman inscriptions.¹

The site must have been much encumbered with brushwood and disjointed masses of masonry, but notwithstanding all this, Fabio Giordano knew of the existence here of a theatre or circus, of a nymphaeum, of the 'piscine', and of the half of a portico clad with marbles and adorned with statuary, including a statue of Mercury and other divinities.² From Paleologo the property passed by purchase to a noble family of Salerno of the name of Maza, who for several generations showed a commendable interest in archaeology. Francesco Maria Maza (*circ.* 1680) was himself the author of the indifferent inscriptions which he caused to be affixed to the so-called 'Piscine of V. Pollio' and to the 'Temple of Fortune', and which are still *in situ*.³

The fate of the Maza collection was dispersal, and the loss to archaeological science was irreparable, for a *catalogue raisonné* had never been prepared of them.

Several objects of art from Posilipan sites found their way into the hands of Spanish collectors, and are still no doubt among the Roman antiquities in Spain. Many fine pieces were taken to Mergellina and lost among the other ornaments of the villa of the Viceroy, the Duke of Medina.

Under date July 5, 1755, Carlos Weber recorded in his diary that a large and very beautiful marble capital in the Corinthian style, which had been found at Mar piano (Marechiano), was to be sent to Portici to be put into the palace which Cannavari had planned for Charles III in 1738. (Ruggiero, 1888.)

About 1820 the southern portion of the property was purchased by a well-known Neapolitan archaeologist, Cavaliere Guglielmo Bechi, at public auction, and his name was associated with the Villa for more than half a century. During his proprietorship much excavation was accomplished, but again without publication of results.

In 1841 more methodical excavations were commenced on the adjoining property to the west of the course of the ancient lane that led down the valley from the Grotta di Sejano to the sea. Here, his Excellency Monsignor di Pietro, Archbishop of Berito and Apostolic Nuncio at the court of Naples, being much interested in recovering records and treasures of ancient art, entrusted the examination of the region to an architect, Pietro Bersani, and the results of the work

¹ Aldo Manuzio, Grutero.

² Fabio Giordano's sixteenth-century MSS. preserved in the Naples Library.

³ Fr. Guiscardi, *Di un antico tempio a 'Mare Chiaro'*, Napoli, 1906.

fully justified his hopes. The precious marbles lying in the soil must have been so conspicuous that a man would have been blind indeed not to have comprehended their meaning, and the spade having been applied in the winter of 1841, the principal buildings on that part of the Villa were soon brought to clearer light. In a letter to Cavaliere Visconti, dated March 12, 1842, after the work had been going on some five months, Bersani gives a brief *résumé* of their progress. He reports that a fragment of a fluted column of cipolline marble was found at a spot which was strewn with tiles and masses of opus reticulatum. This led them to expect that more might be found here; nor were they disappointed, for they soon discovered anew the Theatre, an Odeon, and the remains of a Portico overlooking the sea. The oblong building now called the Temple was also found and the remains of an aqueduct. On January 13, 1842, a statue of a good period was unearthed; the workmanship was proclaimed excellent, half life-size, Greek in style; and though headless and without arms it was judged sufficiently attractive to please members of the court, and they were invited to view it.

An interesting note upon the site is recorded in the Diary of my brother-Fellow of Magdalen, Nassau W. Senior.¹

We went on Monday, Dec. 30, 1850, with the Gladstones to see the excavations made two or three years ago by an architect, M. Bechi, and by the Papal Nuncio, below the promontory of Posilipo, on the site of the great Villa of Augustus; the villa in which Pollio received Augustus and disgusted him by ordering a slave to be cut up to feed the Murenæ; the villa in which Cicero visited Marcus Brutus, who occupied it as the guardian of young Lucullus.

A few days later he was invited to a private view of the statue of the Nereid at the Museum in Naples.

At the demise of Cavaliere Guglielmo Bechi the property passed to his daughter, who sold it to a speculator named De Negri, who doubtless inspired by the tradition of the teeming fish-tanks of Pollio hoped once more to enclose a portion of the sea and to make great profit for himself out of the prolific capability of fish. With this object he endeavoured to form a company, the 'Società della Piscicoltura del Regno d'Italia nel Mar di Posilipo', the success of which was forecast in a small brochure written in 1864 by Dr. Sorito. In spite of the fact that the arguments were backed up by figures showing that

¹ *Journals kept in France and Italy from 1842 to 1852*, London, 1871.

the profits for the year 1865 would amount to more than 760,000,000 lire, it could have needed no great discernment to perceive that a class who are as jealous of their rights, or as unscrupulous in dealing with those who would interfere with them, as the Neapolitan fishermen, would not be likely to allow their daily bread to be taken without a struggle, and the failure of the Piscicultural Society was the result. The Company went into liquidation and the property was purchased by the Marchese del Tufo, an amateur canoeist, who knew every inch of the coast and was smitten with the idea of an islet home on the Gaiola.

During his occupancy a great deal of digging of all sorts went on. The Marchese opened a quarry for pozzolana between the Villa Bechi and the vineyard above the Scoglio di Virgilio, thus clearing away the central part of what had been a broad continuous terrace along the south front of the property in Roman times, and had lasted until 1870.

The buildings that stood against the hill-side above the terrace, including the southern part of the baths, were just tumbled down the slope into the sea, the pozzolana upon which they stood being shot on board vessels moored in the straits below. During these operations the statue of a female figure was found above the Grotta dei Tuoni, about the year 1872, but the antiquities found, even if we now had them, would be small compensation for the destruction of the buildings.

The next change brought the property into the possession of the neighbouring landowner Signor Acampora, who afterwards parted with it to its late owner Mr. Nelson Foley. The Villa Bechi on the mainland, with a small part of the estate immediately contiguous, passed for a few years into the possession of Mr. Norman Douglas who, when extending the garden, made several discoveries of ancient marbles which will be duly noted later.

Our own investigations with the kind permission of the proprietors were made at various times between 1893 and 1907.

Once more the property has changed hands and the Onorevole Paratore is the fortunate owner of the estate on the mainland, while Dr. Ernest Praun has acquired the Island of the Gaiola.

ROUTES FROM ROME

BEFORE the increased intercourse of the towns of the Phlegraean Fields with Rome had made a direct and permanent road a necessity, travellers from Rome to Naples, having followed the Appian Way as far as Capua, would have proceeded by the straight road which ran due south through Atella and entered Naples by the Porta

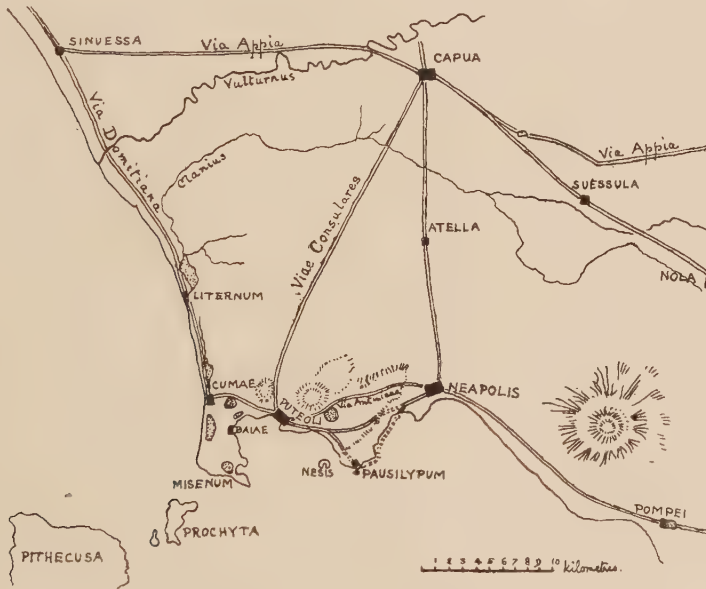


FIG. 2. CAMPANIAN ROADS.

Capuana, on the central thoroughfare, the Decumanus major, then probably known by the name of Dioscurias after the temple of the Dioscuri (on the site of the Church of San Paolo), and now the Strada dei Tribunali. But when under the early Empire the commercial importance of Puteoli, the allurements of Baiae, and the military position of Misenum combined, made a direct highway imperative, the old track leading along the coast south from Sinuessa to Cumae was greatly improved. The way ran along a dull, flat, sandy fore-shore, in places narrowing to a mere bank of sand between the lagoons

and the sea. The only engineering difficulties were the securing the permanence of the causeway among drifting sands, and the bridging of the mouths of the rivers. Of these the Volturnus alone would have presented serious trouble. So great was the volume of its yellow waters when swollen, that before they were effectively bridged by Domitian, the coast route does not appear to have been practicable at all seasons of the year. At the same time, Statius would seem to have given Domitian rather more than his due share of credit in the well-known panegyric on the Via Domitiana, for an inscription¹ found at Castel Volturno is proof of the existence of a road of sorts at an earlier period. It is a record of repairs executed by the Duoviri, M. Arrius and M. Sextius.

By the Via Domitiana the journey from Rome to Puteoli was shortened by some 13 miles and that to Neapolis by some 4 miles.

The actual distances from Sinuessa to Puteoli and Neapolis by the Way of Domitian were about 22 and 28 miles respectively, whereas by the consular roads via Capua they were about 35 miles to Puteoli and 32 miles direct to Naples. By the shortest route the Pausilypum would have been about 133 miles from Rome.²

Communication between Puteoli and Neapolis in quite early times cannot have been easy owing to the natural barrier formed by the steep western escarpment of the Posilipo ridge, which for 3 miles extends like a rampart from Coroglio to the Camaldoli *massif* and

1

M · ARRIUS · M · F ·
M · SEXTIUS · M · F ·
DVO · VIRI · D · C · S ·
VIAM · FACIVND ·
ET · REFICIVND ·
COERAV

² The distances between the stations were thus stated in the Roman itineraries :

<i>Tabula Peutingeriana.</i>		<i>Antonine Itinerary.</i>	
Sinuessa		Sinuessa	1,2
Safo	VII		
Volturno	XII		
Literno	XII	Literno	XXIII
Cumas	VI	Cumas	VI
Puteolis	III	Puteolis	III
Neapoli	V	Neapoli	X

The distance from Sinuessa to Capua was XXVI. The length of the consular road Capua-Puteolis was XXI, and that of Capua-Neapoli XVII.

effectively bars the way. In Roman times there were only three practicable routes. The oldest, the Via Antiniana, led over the northern end of Posilipo at the only point where the gradient allowed of a carriage road: for the rest of its length the western precipices were so deterrent that it seemed easier to carry two other roads through the hill by tunnels each close on half a mile in length, than to engineer roads up and over the obstacle.

The tunnel on the middle of the three roads, known as the Crypta or Grotta di Posilipo, measured 774 yards and the southern tunnel or Grotta di Sejano 844 yards in length. Both tunnels are described



FIG. 3. THE RIDGE OF POSILIPO AND ISLAND OF NISIDA FROM THE WEST.

by classical writers, but partly in consequence of their not being both mentioned in the same passage and partly no doubt to the fact that the existence of the southernmost had been forgotten until its rediscovery not so very long ago, a good deal of confusion has arisen as to which of the two tunnels is referred to in each case. Fortunately, however, the two tunnels were not alike. The Grotta di Posilipo was originally very dark owing to its lowness, narrowness, and the absence of any shaft through which light might enter. The Grotta di Sejano, wider and higher, was partly lit and ventilated by lateral shafts through the cliffs at the head of Trentaremi Bay. We may therefore take it that Strabo was describing the Grotta di Sejano when he wrote, 'There is a hidden passage through the mountain between Dicaearchia and Neapolis, which is pierced like the one near Cumae, so that the way is open for carriages to pass for several furlongs and light from the outside of the mountain is brought down through shafts from many directions,' and that by the term *Fauces*, Seneca was referring to the northern tunnel, in which two chariots could not pass one another and which was also so low that, as Petronius graphically puts it, wayfarers had to duck their heads as they walked through. The comparison instituted by Strabo between the Posilipan tunnel and that at Cumae is unsuited to the Grotta vecchia di Posilipo in its original condition.

No mention of the Grotta di Posilipo has been found which can be regarded as being earlier than the time of Nero, so that it is impossible to confirm or to refute the theory of the older Neapolitan antiquarians who have attributed it to the Cumaei, those mysterious early inhabitants of this region who in the remote past were noted for their burrowing proclivities. The tunnel is mentioned in the Itinerary of the Geographer of Ravenna, and a rough diagrammatic sketch of its two entrances is attempted in the *Tabula Peutingeriana*.

In mid-tunnel a small chamber hewn in the rock contained a Mithraic shrine, with a dedicatory inscription to the god :

OMNI POTENTI DEO MITHRAE
APPIUS CLAUDIUS TARRONIUS DEXTER V · C · DICAT.

I. N. 2481.

A Christian chapel has now succeeded to the Mithræum and often exercises a very important if passive function, viz. that of preserving order in what might otherwise be a dangerous locality. Mithra may also have been a good influence on the side of order.

In its present state there is room in the tunnel for three carriages to pass abreast without inconvenience, save from the dust which the wheels of the carriages and horses put in motion, and which in addition to the choky nature of all dust, exhales a disagreeable, pungent odour. Images and pictures of saints used to be hung on the sides of the cavern, with small votive lamps burning dimly before them; but the presence of these symbols of religion did not prevent the loud imprecations of the coachmen, muleteers, and lazzaroni, which sounded lugubriously amid the reverberations produced by the noise of the carriages.

The tunnel, as we now know it, is very different to what it was when first constructed. It has been shortened, heightened, widened, levelled, and lit since the Middle Ages, so that it is about twice as high and as wide and more than four times as well illuminated. Judging from its present gloom, it is not surprising that in its original condition it was so dark and dusty that Seneca termed it a prison and Petronius complained of not being able to stand upright in it.

Indications of its earlier gradients and dimensions are marked on the walls and have been made the subject of a searching study by Paoli. Owing to improvements having been principally effected by the lowering of the roadway, the oldest marks on the wall made by the dragging of cart-axles are those which are highest above

'TOMB OF VIRGIL.'

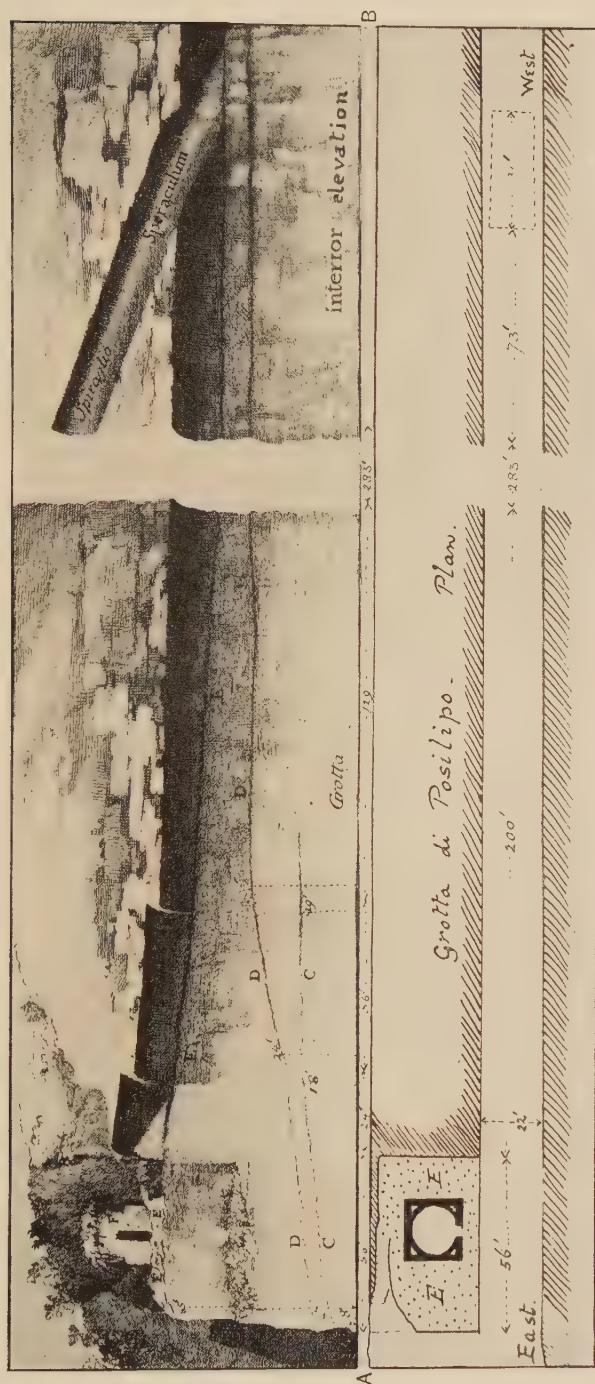


FIG. 4. GROTTA DI POSILIPO. Elevation and plan, partly after Paoli, *Antichità di Poszuoli*, pl. vii.

the ground. The curvature of the original vault is also indicated in places.

The various alterations of which records have been noted on the walls of the tunnel are shown in the elevation, fig. 4. The present roadway *AB* has been cut through the rock. At about a yard above the ground a groove, *CC*, like a cart-rut has been ploughed in the southern wall by the axles of carts which have been allowed to rub against the soft rock when passing other vehicles, or as a simple method of putting on the brake when going downhill *alla Marina*. This groove rises from a height of 8 feet above the present floor of the tunnel, which is nearly level, to 17 feet further in, indicating a gradient of about one in eight. A similar groove *DD*, starting at 14 feet and rising to 34 feet in a length of 130 feet, may be taken as the indication of an older and higher road level.

Finally, at the level *EE* is a projecting ridge which has been taken to indicate a still older street-level, 61 feet above the present. The two tombs, one shown at *F*, by the entrance to the tunnel must have been constructed when the roadway was at this level, for ever since the lowering of the road the doorway to one has been left inaccessible and the other has only been visited by birds and bats.

Arranged in chronological order the following stages may be recognized:

1. The original tunnel answering to the description of Seneca and Petronius and reached by an approach of sufficient gradient and elevation to give access to the tombs. Some improvement is said to have been effected in fifteen days by Cocceius.

2. The roadway lowered to *DD*.

3. " " *CC*.

4. " " present level.

The length of the tunnel has been variously stated by different authors. Passing over the much exaggerated estimate of fifteen miles of Benjamin of Tudela in the twelfth century, we find that some of the older measures are greater than those made nearer our own time. The dimensions, unless otherwise stated, are in English feet.

<i>Year.</i>	<i>Authority.</i>	<i>Length.</i>	<i>Width.</i>	<i>Height.</i>
1570.	F. Giordano.	600 piedi.	24 ft.	—
1607.	Capaccio.	nearly one mile.		
1600.	Sanfelice. de Magistris.			
1692.	Celano.	—	—	34 ft.
1768.	Paoli.	2,300 ft.	20.6 ft.	81 ft E. 83 W. 64—22 ; 5 in centre

Year.	Authority.	Length.	Width.	Height.	
				Ends.	Middle.
1776.	Carletti.	2,283 ft.	19 ft		
1793.	Lorenzo Giustiniani.	2,262			
1841.	Mendia. Original Dimen- sions.	2,322	10.3—8		17—8.6
	„ Actual Dimen- sions.	—	20.5—15	80	14
1862.	Murray.	2,242	21.5	69 E.	25
1890.	Baedeker.	2,271	32—21	87 E.	50—20

One of the benefits to Naples and especially to the traffic with the Phlegraean villages, due to the Spanish Dominion, was the reconstruction of this tunnel. Alfonso I of Arragon relevelled and widened the roadway in 1442, and caused two circular air-shafts to be cut in an oblique direction through the hill so as to allow light to illumine the middle of the tunnel.

Pietro Razzano, however, is quoted as having said that there was no ventilation, that the tunnel was buried in a dense thicket, and that people were afraid to pass through. In 1546, Pietro di Toledo paved the roadway, improved the illumination by two new ventilating shafts and by enlarging the ends, and erected the little chapel to Santa Maria della Grotta in the middle of the tunnel, probably with the intention that it might serve like its predecessor the Mithraic shrine as a check to robbery and other crimes to which the place might be a temptation. By the alterations of this Viceroy the roadway appears to have been levelled to such an extent that the light at one end could be seen from the other as a star,¹ and on a few days about the equinox, the sun actually shines through.

Further repairs were undertaken by Charles III in 1754, internal supporting arches being inserted where the roof showed signs of giving way; the pavement was also renewed.

In the Middle Ages the construction of the tunnel was attributed to Virgil, not to the Virgil as he is known to schoolboys, but to a mythical presentment of him, Virgil the Necromancer. The popular legend may be read in Scoppa with several others borrowed from the *Cronica di Partenope*. The story has travelled into the literature of every nation in Europe,² and a reference to it also occurs in Marlowe's *Doctor Faustus*, Act I, sc. 26:

There saw we learned Maro's golden tombe,
The way he cut an english mile in length
Through a rock of stone, in one night's space.

¹ Scotto, *Itinerario*.

² Cf. Thersander, *Schauplatz vieler ungereimten Meinungen*, ii. 308, 554; Jean d'Auton, *Chroniques*, i, p. 321.

In Naples the story was told that the Grotta di Virgilio, by which name the tunnel was commonly known, was once visited by King Robert and Petrarch. On being asked what he thought of the popular belief, Petrarch answered jestingly that he had nowhere read that Virgil was a magician.¹ To this the king confessed that the place shows traces not of magic but of iron quarryman's tools, 'non illic magici, sed ferri vestigia confessus est.'

Not much less fabulous is the story repeated by Giannettasius (*Hist. Neap.* Dec. 1, c. 1) and Celano (*Notizie*, giorno 9) that Cocceius completed the whole tunnelling in fifteen days; it is, however, possible that this period was devoted to altering or widening a pre-existing tunnel.

It is not surprising when we consider the great development of Virgilian legends in Naples that this wonderful tunnel, so near his grave, should have been attributed by Neapolitans to their mythical benefactor, and it was said to have been rendered inviolable by its proximity to his tomb.

¹ Petrarch (*Itin. Syr.*, i, p. 560 (ed. Basil, 1581). We made our first acquaintance with this story in Benecke's English translation of Comparetti's learned work on Virgilian Legends, but the quotation given by that authority in a footnote is incorrect. For 'nusquam memini me legisse marmorarium fuisse Vergilium', read 'nusquam me legisse magicarium fuisse Virgilium'.

GROTTA DI SEJANO

THE second tunnel passes through the hill but a few yards distant from the vertical face of the yellow cliffs in which Posilipo abruptly ends. Although called the Grotta di Sillano by Giordano, it is now known as the Grotta di Sejano; but how it came to be associated with the minister of Tiberius, unless by a confusion with Sillano, is a mystery. There are good grounds for believing it to be somewhat earlier, coeval in fact with the tunnel near Avernus, constructed by order of Agrippa to connect the Lake with Cumae by a direct road (37 B.C.) and designed by the engineer M. Cocceius Nerva (Strabo). But of course, Sejanus (*circ.* A.D. 20) may have improved or repaired the tunnel, and as we shall point out later, the sides of the tunnel show work of different periods.

That the Grotta di Sejano was used for public traffic until a comparatively late period is shown by two inscriptions that have been found within it. The first on a milestone refers to some part of the long reign of Constantius Pius (335-361): the other has been attributed, though with some uncertainty, to the reign of Honorius (395-413).

VII
D · N
FL · VAL
CONSTANTINO
PIO · FEL
INVICTO · AVG
DIVI · CONSTANTI
PII · FILIO ·

C.I.L. 6930.

The figure VII may relate to the distance from the gate of Cumae, now called the Arco Felice, to the western end of the tunnel. From the fifth century, until its reopening in the nineteenth, we have no information concerning the tunnel excepting a few scattered references to it as a large cave; all knowledge of its former use as a roadway having been lost: but in 1840 the making of the new road from Coroglio to Bagnoli, and the interest in the adjacent antiquities, drew attention to it. It was found that one end of the tunnel

had become closed by earth-falls washed down by water from the hill above, and the entrance was hidden by vegetation. Influenced by a report of the engineer Mendia, King Ferdinand II ordered the clearing of the tunnel in May, 1840. The workmen were at first much impeded in their work by the heat and absence of ventilation, and the falling in of portions of the vault was a constant danger. It was only after the clearing of the ancient air-shafts, opening into Trentaremi Bay, that the air was rendered pure enough to support the burning of the candles. For a considerable space the sides and vault of the tunnel had to be supported by new masonry. The passage was found to be quite blocked by earth-falls at nine points, and one occurred during the progress of the work. Notwithstanding all difficulties the tunnel had almost been cleared by July, 1841.¹

We have unfortunately no indication of the nature of the original approach to the western end of the tunnel. The road-level, now about 22 feet above sea-level, would, allowing for the subsidence of the land, have been at least 40 feet above the sea in Roman times. The new road from the plain of Bagnoli at the Rampe di Coroglio, has been engineered up to the level of the entrance to the tunnel by a double zig-zag traverse, when any indications of the course taken by the Roman roadway were probably buried or removed.

As we now see it, the west end of the tunnel is greatly obstructed by massive arches of tufa which have been recently put in to hold up the vaulting, and which by reducing the width of the opening by one half have rendered the interior much darker than it formerly was. It is a great pity that some plan of restoration, not involving the introduction of these unsightly piers and arches, was not adopted, and even now it would not be impossible so to strengthen the original work in other ways so as to permit of their removal. As it is, it is not easy to appreciate the original effect of the fine entrance, quite 45 feet high, which would be more impressive were it not for the cramped nature of the approach from the road and the partial concealment by a commonplace entrance-lodge.

On examining the walls round the little court before the tunnel it will be seen that the great entrance arch is flanked by strong retaining walls built to hold back the soil of the hill-side. These are faced with carefully shaped stones which are rather smaller than those used for the internal work, and are believed to be of different date. Here, too, it will be noticed that the original vaulting is joined to the later

¹ Mendia's final report in August, 1842, was reprinted by Lancellotti, see *Promenade*, 1842.

work with a lower arch to which painted plaster was still adhering in 1842. On the side walls the masonry is in two different styles, the one coarse reticulate, the other in smaller and more carefully trimmed blocks.

The internal dimensions and nature of the work are by no means uniform from end to end. The eastern or Gaiola end quarried out of the solid tufa needed no further support, but the greater length being excavated in the less compact pozzolana required an internal masonry lining which appears to have originally been executed throughout in opus incertum and tufa concrete, though repairs have



FIG. 5. GROTTA DI SEJANO. WESTERN ENTRANCE.

been carried out in other styles. The roadway rises from west to east. According to the report of the Royal Commission of Sept. 24, 1842, the length of the tunnel is given as 2,526 feet (Baedeker has 990 yards), and is therefore 208 feet longer than the Grotta di Posilipo. The width varies from 21 feet to 13 feet and the height from 28 feet to 14 feet, but the Bagnoli entrance is much higher, being 48 feet high by 23 feet wide. This western entrance facing Puteoli is formed by a very high and strong semicircular arch of brick resting on supports $4\frac{1}{2}$ feet thick. Inside, the walls are of opus reticulatum for some distance. In the north wall is a niche, $13\frac{1}{2} \times 18$ feet long, in which a fragment of an inscription was found referring to repairs carried out in the tunnel, and believed to contain the name of the

Emperor Honorius, which would indicate a date early in the fifth century.

IONORIO
IAVSILIP
GLECTAA
RAIVSVCCAMP
PUBLICO REDDIT

However, we prefer the reading given in the Appendix, p. 211. For a length of some 260 feet the thickness of the crown of the semicircular vault is $2\frac{1}{2}$ feet and the side walls are a little over $1\frac{1}{2}$ feet thick. The vaulting then becomes thinner, $1\frac{1}{2}$ feet being its average thickness for the greater part of the tunnel. After the reticulatum follows a long stretch of opus incertum. Further on, where the rock

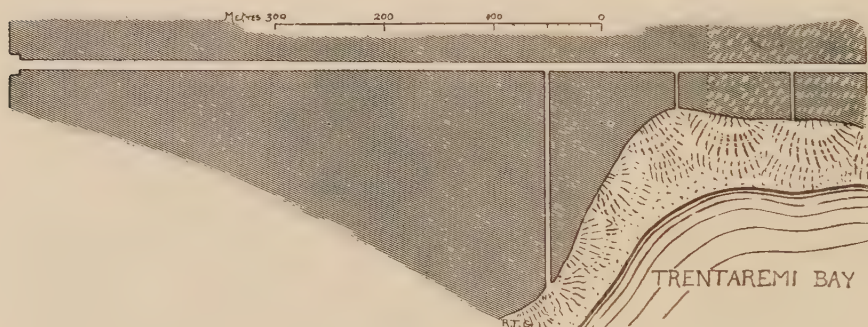


FIG. 6. GROTTA DI SEJANO. PLAN.

was less compact or where the original masonry has failed, the lining had to be reinforced by stronger work, and so we meet with a lining of isodomic tufa masonry of narrow blocks of tufa traversed by a horizontal band composed of three courses of red brick. A portion of the vault is supported by arches carefully constructed in flat red brick, which has been supposed to have been part of the repairs referred to in the 'Honorian' inscription. The varying height of these brick arches would seem to indicate that a good deal of material had fallen from the roof of the tunnel before they were built.

Some human skeletons were found near them. A length of the original opus incertum (largish blocks) follows, which gives place further on to opus reticulatum of inferior execution. In the succeeding length of opus incertum opens the middle ventilating shaft, and this is succeeded by the last or Gaiola section of the tunnel, which has been hollowed out of the solid tufa for a distance of 488

feet (180 feet, Bérard), and is about 16 feet wide by 28 feet. Of the original air-shafts only three remain. The others may have been destroyed by falls of earth, and have been concealed by the later work of restoration. The ventilation is effective, but the illumination is unsatisfactory. Three horizontal galleries open in the face of the cliff over Trentaremi Bay. The one nearest the end of it is excavated in the tufa, the other two in the pozzolana. They are respectively situated at 216 feet, 562 feet, and at 965 feet from the Gaiola entrance to the tunnel. Their dimensions are shown in the following table.

<i>Distance from entrance.</i>	<i>Length.</i>	<i>Width.</i>	<i>Height.</i>
216 ft.	130 ft.	5½ ft.	9 ft.
562	93	5½	8½
965	645	4	7



FIG. 7. GROTTA DI SEJANO. EASTERN ENTRANCE.
The Cave of Polyphemus of Bérard.

The eastern entrance is half blocked by a modern wall of tufa with a doorway: it is about 30 feet high by 20 feet broad. As has been said, the last section hewn through the solid rock is somewhat higher than the preceding portion, which, traversing looser strata, required an interior lining. This simple material explanation of the different character of the two sections of the tunnel does not appear to have been given its due importance by Bérard, who, trusting to the proximity of a few of the common umbrella-pines, identifies this Roman quarry with the Cave of Polyphemus. There may of course

have been a cave here in very early times, a cave used by primitive shepherds and their flocks as a place of refuge, and to keep their wine and milk cool. The existence of a cave may even have suggested the thought of piercing the mountain; but much clearer evidence will be necessary before we can accept it as the scene of the Homeric legend.

In any attempt to appreciate the cost of these really great undertakings, it should be borne in mind that it was the practice in Roman times as at the present, to quarry tufa and pozzolana for building, by excavating large galleries underground without disturbing the surface soil; and to drive one of these quarry galleries straight on through the mountain could have involved but little extra expense. It is probable that the Grotta di Sejano was one of the quarries whence was drawn much of the material used in the extensive constructions above and below water to be described later: the material excavated was certainly not thrown out to form large spoil-heaps like those near the ends of modern railway tunnels. The labour must have been immense, for it has been estimated that the quantity of material excavated from the Grotta di Sejano alone was not less than 100,000 cubic yards. In addition we have the expense of investing most of the tunnel with the masonry lining.

One problem still remains for discussion: why should the Romans have gone to the trouble and expense of constructing two long tunnels through the hill so close to each other?

The view commonly held is that the Grotta di Posilipo was for the public traffic between Puteoli and Neapolis, whereas the larger Grotta di Sejano was for the private service of the Villa Pausilypon. If this were so, it is strange that such a magnificent appendage to an Imperial Villa should not have been a theme of eulogy to any of the court writers who were acquainted with the locality, and who never lost an opportunity of praising every luxurious contrivance that might display the magnificence of their patrons. Taking this omission into account, with the general belief that the Grotta di Sejano was of an earlier period than the other, that it was larger and better lighted, and coupling with this the evidence that the road that passed through it was continued along the coast of Posilipo to Neapolis, and was a public way during the fourth century, we are led to the conclusion that in its earlier and later periods the Grotta di Sejano was a public thoroughfare, although it is possible that in the interval, after the shorter route by the Grotta di Posilipo had been opened, effective measures may have been taken to secure privacy to the Imperial Villa.

VALLONE DI GAIOLA

JUST below the point at which the tunnel opens into it, the Vallone di Gaiola widens, no doubt owing to the little cutting which sets the tunnel back from the bend of the valley. The steep hill-sides, neatly terraced and planted, cottages nestling among the fruit-trees, the thick growth of canes along the bottom, make a typical picture of peace and fertility. Along the ridges of the hills aloes and old and stunted oaks, though now confined to hedgerows, are here as elsewhere on Posilipo, the last survivors of a more widely spread coppice vegetation which preceded the vines.

The hill which divides us from Trentaremi Bay has been greatly reduced on the seaward side by landslips which have left it but a ridge, so narrow and so precipitous that the workmen can only reach their pozzolana quarry by a small passage through the rock.

Beyond the tunnel we could not perceive, nor could we learn, that there were any remains of paving to the roadway; but then, neither has a paved floor been detected within the tunnel itself. It must, however, be remembered that the natural forces of erosion act with extraordinary rapidity on the light and loose materials which overlie the more solid yellow tufa of the hill. Observations made on the valleys which seam the similar slopes of the Camaldoli massif, have shown with what rapidity beds of valleys such as these may change, becoming deepened in some places, silted up at others.

The road, after emerging from the tunnel, pursued the downward course of the valley, passing some buildings of minor importance of which nothing but the foundations under some modern cottages now remains. Still descending, the road passed below the little Temple which occupied an imposing position above on the right. In front and at a greater altitude still, was a magnificently situated house, which we have named the House of Pollio, lying high above the road near the point at which it passed through a short artificial tunnel 45 feet long by $11\frac{1}{2}$ feet wide.

Many caves have been cut in the tufa sides of this valley, which are still useful to the *coloni* as barns or stables. Of the many

buildings which have disappeared in recent times we noted one with reticulated walls at the foot of which many fragments of coloured marbles might have been picked up ten years ago, but the site has since been obliterated by an alteration of the road leading down to the Gaiola.

On the east side of the valley, a large cave hewn in the rock has been adapted as a water reservoir, by the construction of a massive retaining wall 9 feet in height across the entrance. Some Roman brickwork and ancient cement indicate the antiquity of a work which was so well executed that it is still in use. The capacity cannot have been less than 30,000 gallons.

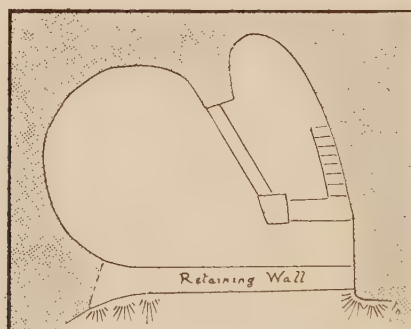


FIG. 8. A WATER RESERVOIR.

THE BUILDINGS OF THE PAUSILYPUM

THE most important antiquities on the Gaiola ridge are so situated that, although not far from Naples as the crow flies, they are by no means easy of access. The ruins stand on private property and may only be visited by permission of the owner. They may be reached by sea, or by stumbling through the tunnel of Sejanus, or by a lane, roughly paved and so narrow and dusty that tourists do not go there as often as the interest of the antiquities or the charm of the site would lead one to expect.

THE THEATRE

Among the ruins, the one which attracts most attention and which appeals strongly to the imagination on account of its remoteness from any possible audience, is the Theatre, now in the grounds, part garden, part vineyard, of a private villa. We come upon it at a turn in the path that leads to the house: it is a surprise when emerging from between the vines, to behold an open space, surrounded by a semicircular auditorium in the hill-side. The seats are discernible here and there through a thick clothing of weeds and grasses, genista, fennel, and hemlock; while some stunted oak-trees are growing on the top of the hillock, at the back of the ruined wall of the gallery, the green standing out against the blue sky.

The arena is before us, and though overgrown with weeds is clearly defined; beyond it, above a clump of green shrubs and overlooking the upper tier of seats of the theatre, stands the modern white-plastered, unpretending country house of the owner, Signor Acampora.

The site was first cleared in April, 1842; but the existence of a structure of such conspicuous form and dimensions must have been well known to the successive tenants of the property: and failing any other in the vicinity, must in all probability have been the theatre

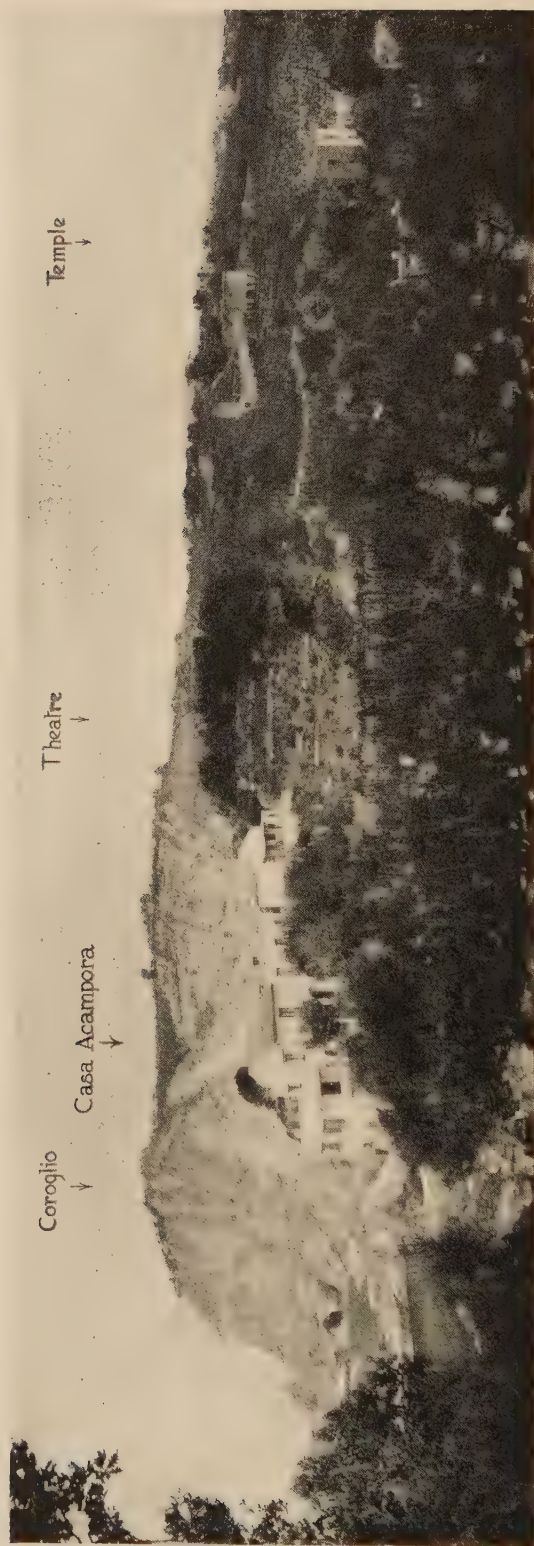


FIG. 9. VIEW FROM ABOVE THE ODEON, LOOKING NORTH.

mentioned in the sixteenth-century manuscript of Fabio Giordano.¹ And so, although the credit of its rediscovery cannot be given to the architect employed by Monsignor di Pietro, yet to him is the greater merit of having been the first to clear it, and render it available for study. At present, the western side is again encumbered by débris.

The theatre has a twofold claim upon our attention. In the first place it appears to have been the private theatre of an Imperial villa, and very few other examples of private theatres are known,² and secondly, there is a remarkable absence of any stage building, from which we may infer that it was constructed during a transition-period, before the Romans had entirely overcome their early prejudice



FIG. 10. THE THEATRE. (From *Collina di Posilipo*.)

against stone-built theatres, which they considered a yielding to Greek luxury. It is pretty certain that for a long time, in consequence of this feeling, no theatre was built in Rome of anything but wood: the first stone theatre, Pompey's theatre, was not constructed before 55 B.C. At the same time, like our modern Elizabethan Stage Society, they may have adapted the structure of the stage to the nature of the play; and we know that Menander was played in Naples in the first century. It would not be unnatural for the patrons of the stage, even when accustomed to the greater comfort of stone seats under an awning, *velarium*, to remain conservative in their views about stage fittings and

¹ A. Gervasio, *Osservazioni intorno alcune antiche iscrizioni che sono o furono già in Napoli*, 1842, p. 62; F. M. Avellino, *Bull. arch. Nap.* i, p. 86.

² Heinrich, *zu Juvenal*, Sat. vi. 70, p. 228.

THEATRE

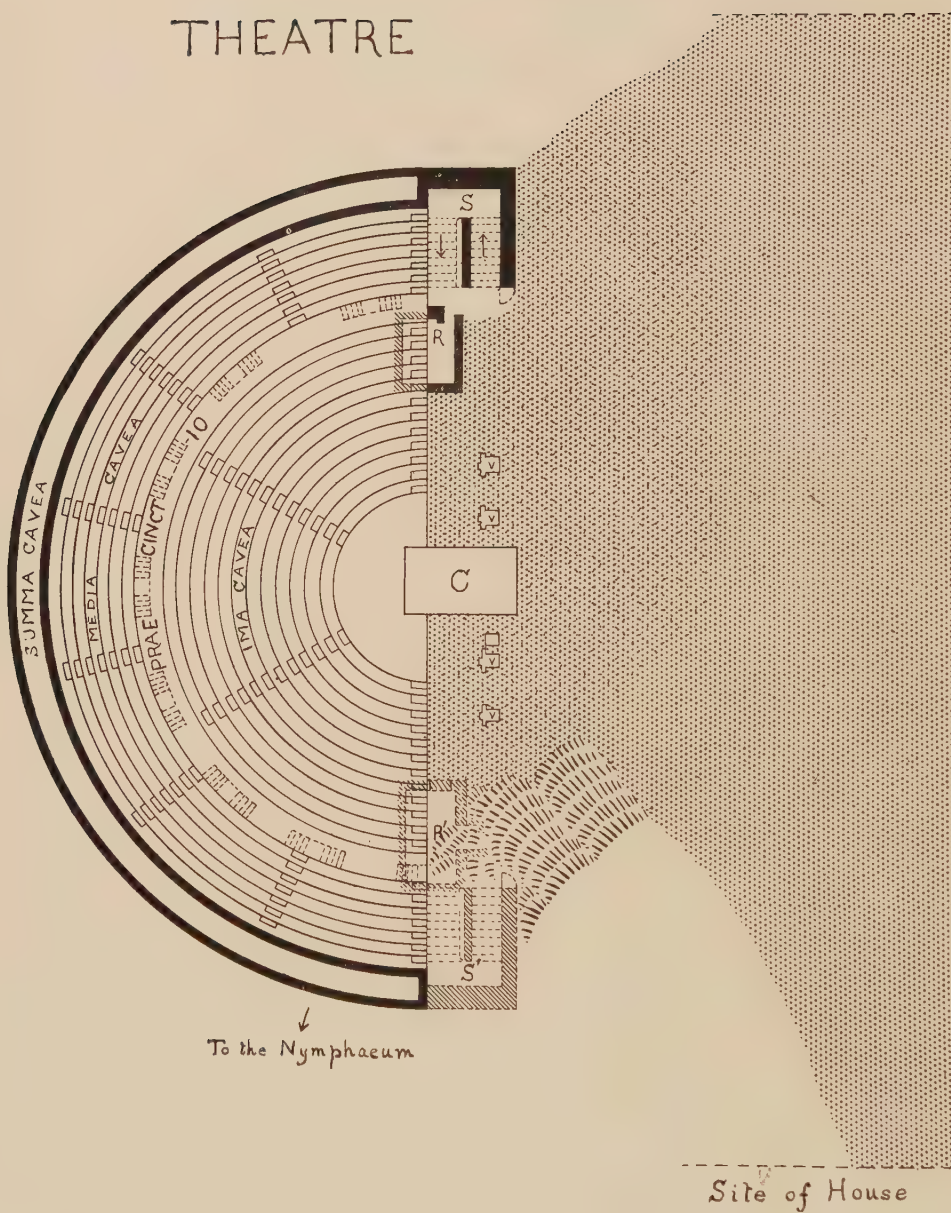
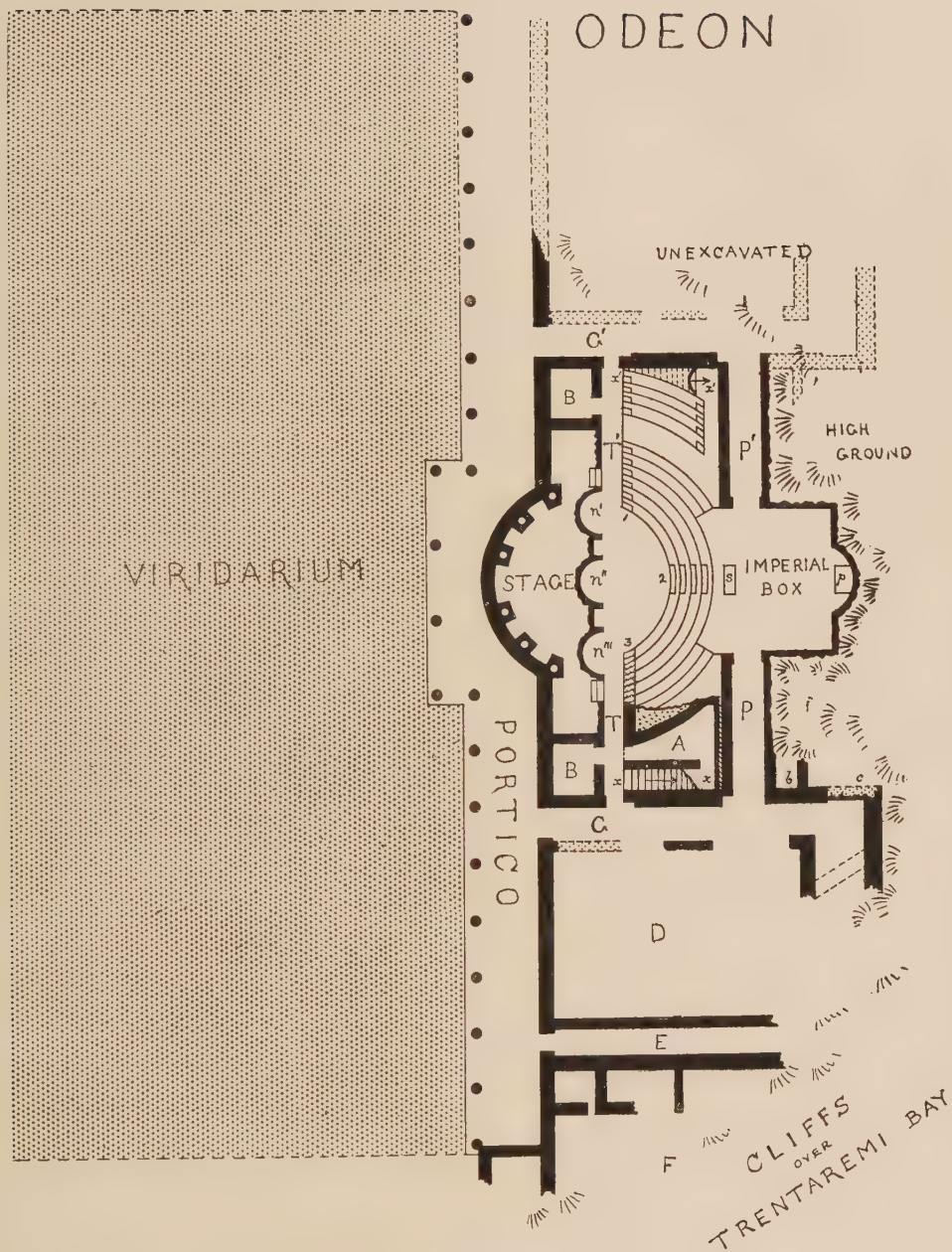


FIG. II. PLAN OF THEATRE,



VIRIDARIUM AND ODEON.

furniture and to desire to retain the wooden stage; which might, moreover, have advantages in the way of rapid alteration or of easy removal. The theatre measures about 51 yards in diameter, and its orientation is about 4° E. of true south. The orchestra was paved with white marble, of which fragments have been picked up near the main stairway, but none of the slabs are now *in situ*.

In the middle of the arena is a shallow rectangular pit, shown in fig. 13 and marked c on the plan, measuring 20 feet long by 13 feet wide and sunk out to a depth of 2 feet. Its sides are faced with tufa (*opus reticulatum*), but originally it undoubtedly had an inner lining of marble veneer, and, as Ruggiero has already suggested, might have been a compluvium into which rain-water was conducted; but, as there was no lack of water 'laid on' to all the Pausilypon buildings, it is more likely to have been a tank to receive the jets from fountain figures like those of the House of the Vettii in Pompeii. On either side of the tank are two deep holes (*v, v, v, v*), the purpose of which seems to have puzzled the original excavators. We believe them to have been part of the contrivances for supporting stage scenery, curtains or awnings, carried on wooden masts or uprights stepped in the holes. The channels down the sides of the holes even suggest the positions of heel-ropes used for raising or lowering the masts. Further excavation might possibly reveal their purpose more clearly.

In the construction of the *cavea*, the builders, following the Greek practice, took advantage of a hill-side facing southward, which they hollowed out and lined with the seats of the auditorium. The details of the plan are not quickly grasped, for although seats and stairs are discernible here and there, yet the thick clothing of weeds, with roots driving the stone-work asunder, no less than the well-intentioned restorations of Pietro, have so obscured the original work, that even the exact number of the rows of seats cannot be counted without much care. Further, owing to the entire removal of the marble slabs with which the lower benches at any rate were once covered, it is impossible to make measurements with accuracy, which is the more regrettable as the two sides of the theatre are not exactly alike, and so the commonly accepted symmetrical plan published by Fusco must be regarded as unreliable in detail.

The auditorium consisted of 18 or 19 rows¹ of seats surrounded by a gallery. The seats are divided into two concentric tiers (*cavea ima et media*) by a *precinctio*, 4 ft. 4 in. wide, with a wall 4 ft. 4 in. high; 12 rows of seats being below and 6 or 7 above the *precinctio*. The stairways

¹ The number 17 given by Fusco and repeated by B  loch is certainly too small.

are all above ground; there are no *vomitória*. The seats of the *ima cavea* are divided into three *cunei* between four radial stairways; those of the upper tier or *media cavea* into seven *cunei* by eight stairways. Communication between the *precinctio* and the stairways of the upper tier is by narrow double flights of five steps leading to small landings, 3 ft. 3 in. long by 2 ft. 3 in. wide, which lie at right angles to the course of the upper stairways. Of this arrangement, which is very economical of space, not many examples have been preserved in Italian theatres, but it is to be seen in the theatres in Asia Minor, built *circa* 165 by Lucius Verus and Marcus Aurelius at Aspendos and Bosra respec-



FIG. 12. STEPS LEADING UP FROM THE PRECINCTIO.

tively.¹ The steps leading to the landings are 2 ft. 3 in. wide, 1 ft. 1½ in. broad; the risers being 9 inches high. The distance between certain of the landings is about 7 yards, but this interval varies greatly on the two sides of the theatre, being longer on the east side than on the west.

The distances between the centres of the landings are as follows: measuring westward from the centre of the landing in the middle of the *cavea*, we recorded 22 ft. 6 in. + 21 ft. 2 in. + 20 ft. + 21 ft. 8 in., the last measure being to the outside of the wall at the western end of the *precinctio*. Total, 85 ft. 4 in. Measuring eastward from the same central point, we recorded 23 ft. 2 in. + 22 ft. + 27 ft. 4 in. to the outside of the wall at the eastern end of the *precinctio*. Total, 72 ft. 6 in. This

¹ Durm, *Baustile*, ii, figs. 728, 730.

remarkable irregularity may be explained by supposing that an originally symmetrical arrangement has been obscured by later alterations.

The width of the seats also varies: they are broader below than above the precinctio, in the proportion of 30 in. to 25 in., the average width of the seats of the easternmost cunei. The upper seats were not



FIG. 13. EASTERN SIDE OF THE THEATRE.

covered with marble, but were merely coated with hard plaster, small pieces of which still remain.

The *summa cavea* or gallery, 9 feet wide, was separated from the upper row of seats by a wall, which, though ruinous, still rises 4 feet above the last seat. It was almost certainly covered by a portico, but all traces of the columns or of the positions they occupied are lost. The gallery was reached by the two large staircases (s, s') at the ends of

the auditorium, but there may have been other entrances to it from behind. On the level of the eighth row of seats are the two tribunals (fig. 11, over R, R'), the small rectangular platforms with privileged seats, one of which, in a public theatre, would have been at the service of the magistrate who gave the play, the other in Rome would have been occupied by the Vestal virgins. Behind the tribunals, but higher up and on a level with the walls of the gallery, were two small chambers each covered by a semi-vault, over which stairs in continuation of the lateral staircases may have led; but of these chambers no vestige now remains.

On the ground floor, partly beneath the tribunals and partly under the end-stairways, are two small rooms R, R' (walls faced with opus lateritium and reticulatum, and plastered), which, like the substructions of Pompey's theatre, had painted decorations on their walls. It is possible that they were dressing-rooms for the actors. The room on the west side is 16 feet long, with an entrance in the middle of the south side, but that on the east only measures 12 ft. 4½ in. long by 8 ft. 6 in. wide, and is covered with a barrel-vault. It is said that a parallelopiped-shaped mass of brickwork originally lay along one side, but it had already been destroyed in 1842. Little of the original plaster is still adhering to the walls, but what there is, is of good hard quality, and mixed with finely-ground marble; and there is sufficient above the north-west corner of the room to indicate the character of the decoration, both of ceiling and walls.

Along the level of the springing of the barrel-vault at a height of some 5 ft. 6 in. a slight cornice moulding, 4 inches wide and with two fillets, ran all round the room. The same moulding was continued over the shorter end-walls of the room, immediately beneath the ceiling, thus enclosing a lunette, which was also bordered by a band of red, following the inner contour of the white moulding. No further decoration can now be made out within the lunette. Along the bottom of the walls was a red painted skirting 3 inches high. An outer black border 2 inches wide ran round each wall immediately beneath the cornice and down the corners of the room. The character of the decorations is indicated in fig. 14.

Upon the western wall was a rectangular panel framed in red, with a pediment over and with the suggestion of an architectural canopy painted red, in perspective. Within the rectangular panel was a small oblong picture, the subject of which is now quite effaced, while above in the upper angles is a yellow circular ornament, perhaps part of the decoration of a candelabrum. The wall space on the north was

divided into three panels by vertical red lines, one line 1 inch broad, with two parallel $\frac{1}{8}$ -inch lines ruled one on either side.

The margin of the ceiling was outlined by a red band following the cornice, within which, and at 18 inches distance, was a running ornament, suggesting a curtain festooned and hanging from rings, also

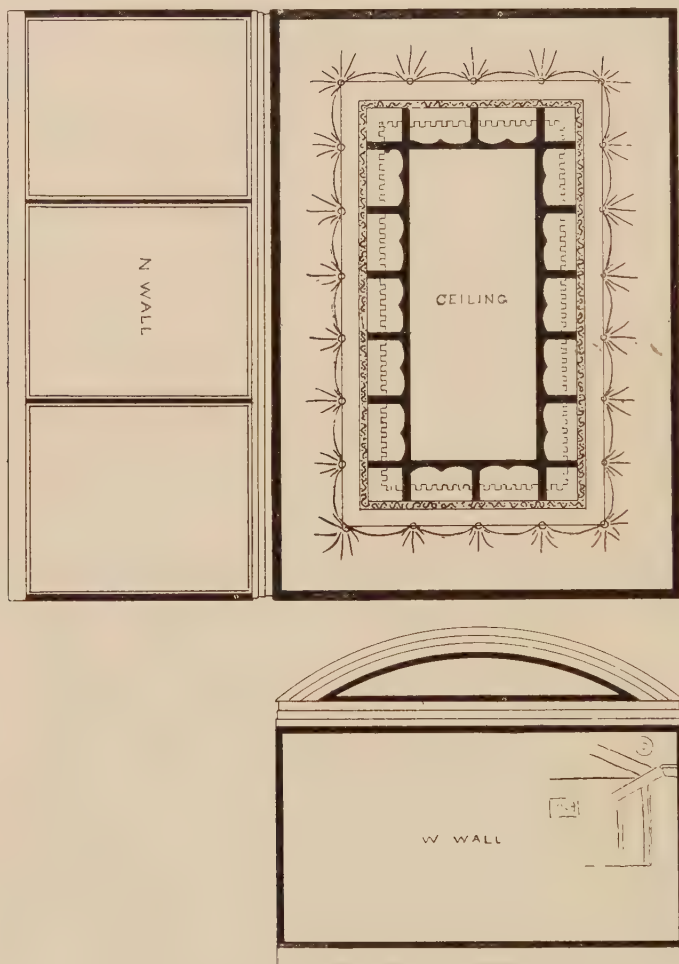


FIG. 14. MURAL DECORATIONS OF ROOM R.

painted in red. Then a row of small panels arched over, in red, and traversed by a green band of simple key pattern. The lower red border below the panels was further decorated by a yellow running ornament of foliage and scrolls. The wall of the corresponding room R' on the west side was decorated with a fresco representing a two-horsed chariot being driven by a woman wearing a cloak, which was

depicted fluttering out to show the pace of the horses. The background was painted dark red.

Of the furniture of the theatre there is not much to relate. The marble seats had all been removed before 1840. But among the objects unearthed by Camillo di Pietro were some of the stone brackets which supported the poles to which the velarium was fixed. The head of a youth, perhaps an Apollo, was the only piece of sculpture found here.

The number of spectators for whom accommodation could have been provided has been computed as 2,000, allowing 23 inches per person. There would have been 600 seats below the precinctio, 850 above it, and at least 200 more under the portico, and 350 on the precinct, arena, and elsewhere, with a full house.

Under the blaze of the noonday summer sun, for the theatre faces south, the gold and brown of the burnt grasses of the slope, the oaks above and the white house, green and white against the sky, the bright green of the vines below, beyond which, at a stone's throw, rises a cliff in the adjoining vineyard, enhancing the brilliance by the dullness of its unlit tufa face—this all makes a little picture to delight, and the antiquarian interest becomes, for the time being, quite secondary. No pleasanter site or more charming landscape could be found for the erection of the massive buildings clad in white marble which no doubt rose among masses of green, for the Romans well understood how to gain the full effect of architectural beauty by the contrast of masses of evergreen and other vegetation.

THE ODEON

SOME 50 yards south of the theatre, where the ridge between Trentaremi Bay and the Vallone di Gaiola becomes higher, another large building has been raised against the hill-side. This was the

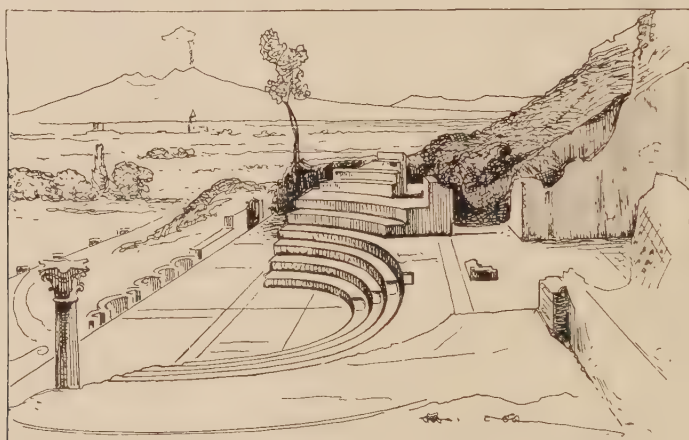


FIG. 15. THE ODEON. (From *Collina di Posilipo*.)

Odeon. Odeon and theatre both, were carved out of opposite hill-sides, so that the auditoria face one another; their chords also were parallel, and there is but little doubt that galleries of communication, the foundations of which are still partly traceable, connected the ends of a portico which lay behind the stage of the odeon with the wings of the theatre opposite. See the plan on p. 33. Thus a quadrangle was enclosed which may have served on occasion for extended spectacular performances viewed from the theatre, or at any rate as a *viridarium* or garden between the portico of the odeon and the wooden stage building of the theatre. Such a *viridarium* was attached to the odeon of Herodes Atticus at Athens. It is traversed by an underground aqueduct, whose course is indicated in the large map. The whole of the area is at present under vines and fruit-trees.

The late writer Hesychius tells us that the purpose of an odeon

was for the performances of rhapsodists and of players on the cithern, but it is more than likely to have also served for the recitations and declarations of poets and orators and for public readings. For this purpose Hadrian had built the Athenaeum in Rome, and, whatever the tastes of his predecessors may have been, would not have considered an Imperial Villa complete without a building for this purpose.

The odeon was all built of concrete faced with opus lateritium and reticulatum; the more important parts were overlaid with ornamental marbles, among which *rosso antico*, *giallo antico*, Parian, and *pavonaz-zetto* were abundantly used, while the walls of the passages and smaller rooms were coated with plaster and were coloured.



FIG. 16. THE IMPERIAL BOX AND PASSAGE (P).

Unlike the theatre, the odeon was furnished with a well-proportioned permanent stage building, at the back of which ran the portico, which formed the southern side of the garden quadrangle.

In the auditorium the positions of the *cunei* and of the number of the *gradus* were carefully recorded at the time of the excavation, and have been indicated on our plan. But the chief interest lies in the presence of a very large space in the centre of the auditorium, at the level of the fourth *gradus*, which must be regarded as the Imperial box. The back wall, with a large apse faced with tufa for a height of 18 inches and then with red bricks carefully laid, and originally wainscoted with coloured marbles, is one of the best preserved parts of the building and now holds up the hill-side behind. It is now about 16 feet in height.



FIG. 17. WESTERN STAIRWAY TO AUDITORIUM AND ENTRANCE TO THE SMALL ROOM UNDER IT.

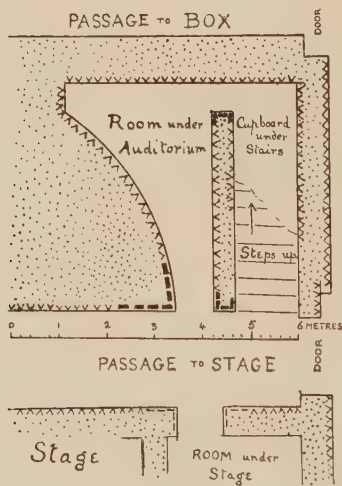


FIG. 18. PLAN OF STRUCTURES SHOWN IN FIG. 17.

The Imperial seat or *pulvinar* (*s*) is indicated by a small elevation in the middle, and in the apse behind, was a pedestal (*p*) that would have supported a statue. The walls are still studded with the iron holdfasts which kept the marble overlay in place, and curved pieces of the *giallo*

antico mouldings have been found. The approach to the Imperial box is, from behind the lateral cunei on both sides, by two passages (P, P'), each 6 feet in width, with a door at either end of each passage. The walls of the passages are reticulated, plastered and coloured red and yellow.

On either side of the central box were two lateral cunei, affording room for six more gradus. The means of access to the seats of the auditorium is ample and excellently planned. Two passages (*παροδοί*) (T, T'), 6 feet in width, and quite separate from those leading to the Imperial box, lie between the auditorium and the stage. Three small radial stairways rising from the orchestra led to the lower seats, and two others (X, X') in laterally placed *vomitoria* provided for access to the uppermost of the seats of the cunei, which could thus be reached from the *parodoi* (T, T'), without persons passing in front of, or intercepting the view from, the Imperial box.

Two small and dark rooms of awkward, triangular shape were contrived under the cunei next to and partly under the lateral stairways. Their walls are faced with reticulate work, the angles of which are formed not of the usual brick *lateritium*, but of tufa, as shown to the left of the stairway in figs. 17 and 18, worked in three-course ashlar. The interior was plastered white. The ceiling is formed by the underside of the sloping concrete floor above, and has a steep pitch in consequence. It is about 18 inches lower along the curved side than at the other side. Upon the underside of the ceiling may be clearly seen the impression of the scaffold boards, upon which the newly mixed concrete had been thrown.

Raised a little above the orchestra, a long and narrow stage, measuring $56\frac{1}{2}$ feet long by 9 ft. 9 in. wide, was reached by a few steps from the passage (*parodos*) at either wing. It has been suggested that such steps were used by actors pretending to have arrived from a distance. The foundations of the stage building, of *opus lateritium* and *reticulatum*, are in a tolerably good state of preservation: they show the elevation of the *proscenium* to have been of the usual type, with niches, three semicircular and two rectangular, in which messengers, or those charged with the maintenance of order during the performances, may have sat.

At the back of the stage is a hemicycle, once ornamented with six fine, fluted Corinthian columns of cipolline marble about 9 ft. 6 in. in height and 14 inches in diameter, the lower 3 feet of the fluting being filled with a bead. Two of these columns were found entire, and a photograph of one of them which has been moved to the

house of Signor Acampora, was used for the accompanying sketch as a suggestion of the original appearance of the hemicycle.

At the two ends of the stage building are two small chambers, about 6 feet square, which may have served as dressing-rooms for the performer, who would have stepped forth 'well combed, draped in his new toga, wearing rings on his fingers, his larynx made supple by an emollient potion, and gazing on the audience with a caressing eye'.¹

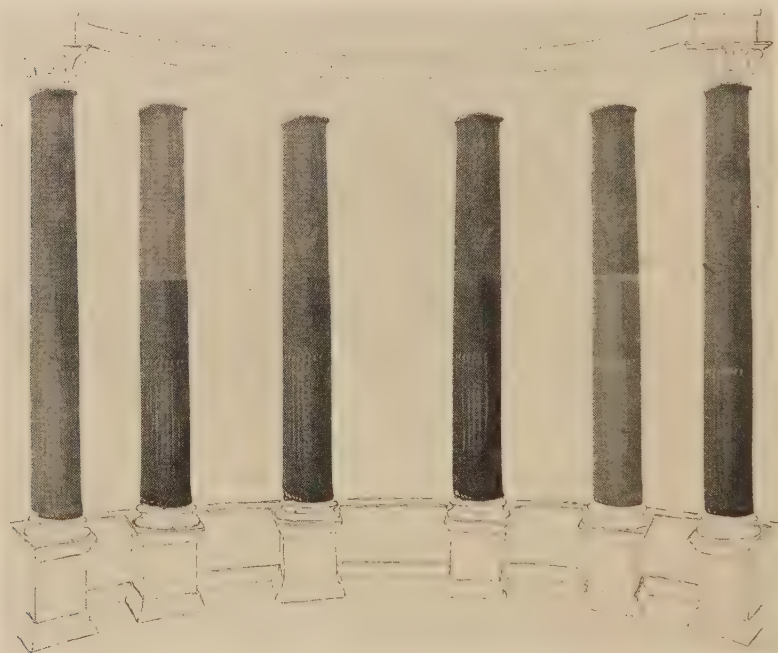


FIG. 19. SUGGESTED RESTORATION OF THE BACK OF THE STAGE.

Both parodos *r* and the passage to the Imperial box *p* open out of a passage *g* which led out to the portico at the back of the stage building. The walls of the passage were painted pink.

The Portico.—Upon a pavement raised 1 ft. 3 in. above the level of the garden, stood eighteen brick-built columns covered with fluted stucco, in the Tuscan style. These columns were 21.5 inches in diameter and 7 ft. 5 in. apart and stood on squared marble bases. The centre of the portico, for a length of about 14 yards, projected slightly into the quadrangle, thus making an effective break of line.

The general appearance of the columns and of the western corner of the portico as seen from the viridarium, would probably have

¹ Persius i. 18, quoted from Boissier.

resembled the view of the corner of the Pompeian peristyle shown in fig. 20.

The pavement was formed partly of little chips of marble of varied colour, in which African breccia is abundant, and partly of white mosaic, and between the columns were inlaid bands of white marble sloping towards the wall of the odeon. The pavement lay about 3 feet below the top of the ruined wall of the hemicycle. The white mosaic tesserae, which were roughly cut, have been for the most part turned over by the mattock of the cultivator, but their abundance at certain spots still shows the extent of the ancient pavement.



FIG. 20. A CORNER OF THE PERISTYLE IN A POMPEIAN HOUSE.

Buildings extend for many yards on both sides of the auditorium. Those to the east have not as yet been excavated, but on the other side to the west, overhanging Trentaremi Bay, several chambers *D, E, F* lined with opus reticulatum have been cleared of earth. They appear to have communicated with the passages *G* and *P* leading to the Imperial box.

Between the south wall of the passage *P* and the hill the excavators have opened a long narrow chamber *b*, nearly 5 feet wide and covered with a barrel vault. The construction of the west end of this block of building is shown in fig. 21. The reticulated parts of the wall were covered with red painted plaster. On the floor above were other apartments, probably on both sides of the Imperial box. The floor of one of these, *c*, of opus signinum, may just be seen in the corner of the passage, resting upon solid ground at a height of about



FIG. 21. WALLS TO THE SOUTH OF THE PASSAGE LEADING TO THE IMPERIAL BOX (A) IN THE ODEON.

13 feet above the floor. The rest of the building is on the edge of the cliff, and much has been lost by the falling of the cliff side.

At the time of the excavation of the building it was considered that there was clear proof that the odeon had originally been roofed over, as was usually the case.

The measurements of the odeon are: length of stage building over all, 116 ft. 6 in.; radius of hemicycle of stage building, 16 ft. 4 in.; depth of stage at sides, 9 ft. 9 in.

The Imperial box measures 27 feet by 20 feet; apse, 10 ft. 6 in. across, by 3 ft. 10 in. deep.

Construction. The south side and the apse are faced with brick-lateritium, excepting for the lower 18 inches, which is of tufa. The passages leading to the box are faced with reticulate work, but the angles are of brick-lateritium, of which thirteen and six courses alternately are ashlar into the reticulate work. There is a good example of this kind of work on both sides of the eastern end of the passage P, where the thirteen courses occupy 2 feet, and the six courses rather less than 1 foot, the average being 1.8 inches per course. The jambs of the entrance to the triangular chambers under the cunei are built in tufa-lateritium laid in three-course ashlar in 12½ inches, which inclines us to the belief that this part of the building is older than the brick-faced door jambs of the small rooms B, B' on the opposite side of the parodos. The seats of the auditorium, which are 2 ft. 3 in. wide, are also built in tufa work. So that in the absence of evidence to the contrary, we refer the auditorium to an older period, perhaps to the time of Pollio, while the stage building and the Imperial Box and the passages leading thereto, may be referred to a later, perhaps Hadrianic, period.

The reticulated wall of the vomitorium at the west end of the auditorium appears to have been thickened at the later period, its original thickness having been 1 ft. 6 in., final thickness 2 ft. 2 in.

THE HOUSE BY THE THEATRE

The Stairway.

WE now proceed to describe the antiquities on the hill to the west of the theatre round about and under the house formerly occupied by Di Pietro, but now in the possession of Signor Acampora. It is one of the many instances on Posilipo of the permanence of dwelling sites, of a Roman building being still utilized as a modern habitation.

During the course of the excavations of 1842 a stairway consisting of several short flights of steps and landings was found to lead from a passage from the arena of the theatre westward up the hill-side to another large building, supposed to have been a Nymphaeum, and probably also to the gallery of the theatre. After a re-examination of the site, we have, however, come to the conclusion that the stairway led to a dwelling-house situated alongside the theatre, and of which the so-called Nymphaeum, to be described presently, may have been the peristyle.

At the bottom, near the corner of the viridarium, the early excavators thought that they recognized a few steps and a landing, whence a slight incline some 14 yards in length led higher. The incline gave access to a small chamber with a reticulated vault, and then to a second, though in a more ruinous state. From the top of the incline a wide flight of four steps, 11 feet in width, led to another landing; the lower three steps were covered with tiles in fair condition, but the tiles on the top step were much broken. On the left of the landing, at an elevation of 1 ft. 3 in. and between two pilasters, was a marble threshold indicating a doorway; and on the right another threshold-stone of piperno with a socket for a bolt.

Eight steps led higher in a northerly direction; the first four were covered with tiles and were 8 feet wide, but the other four were only 6 feet wide, the topmost being formed of blocks of piperno.

Unfortunately the old stairway has been replaced, or at any rate is quite hidden, by the modern steps and path leading to Signor Acampora's house: we can only approximately follow Fusco's description of its ancient course; to examine it critically is now impossible.

The Rooms under Signor Acampora's House.

A ground-plan of the cellars under the house is shown in fig. 22.

Such parts of the walls as can be seen are faced with reticulate work, as indicated by the tothing in the figure, and are finished off at the corners and door jambs with tufa-lateritium. Unfortunately the further excavation necessary to reveal the complete ground-plan

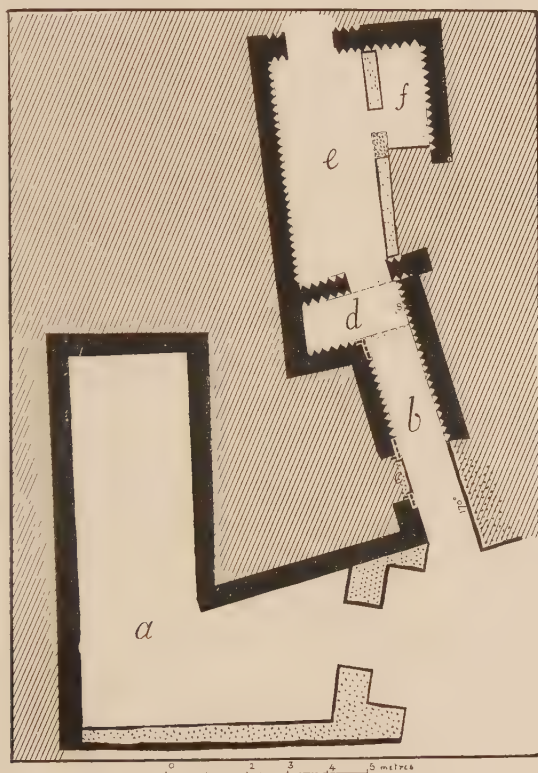


FIG. 22. CHAMBERS BENEATH THE HOUSE OF SIGNOR ACAMPORA.
Roman walls, black: later walls, dotted.

cannot be undertaken without danger of weakening the foundations of the dwelling-house above, but enough of the several parts of the building has been cleared to show that they have varied orientations, indicating a modification of the original plan by later additions and alterations.

On the west a large L-shaped modern storeroom (a) has been formed by building a new wall across the Roman work: it is about 9 feet in width, the length of the further part being about 30 feet.

A narrow vaulted passage *b*, 6 feet high (compass-bearing 170°), leads past a walled-up doorway *c*, flanked by lateritium jambs, into a small cross chamber *d* with a barrel roof 9 feet high, perforated by a small shaft *s*. Opening out of *d* is a larger chamber *e*, 18 feet long by 7 feet wide, which communicates with another smaller chamber *f*, 3 feet by 8 feet, and with an unexcavated space of unknown extent.

The small cross chamber *d* seems to have formerly extended further in an easterly direction, but it has been blocked: it is of more recent construction than the chamber *e*, though probably older than one side of the low passage opening into it. On the west side, the tufa door jambs certainly seem to belong to the older Pausilypon period. The crossing of the vaults at different levels presents some interesting constructional features.

THE 'NYMPHAEUM'

THE next structure of importance which claims our attention lies buried behind the house of Signor Acampora beneath the garden, overlooking Trentaremi Bay.

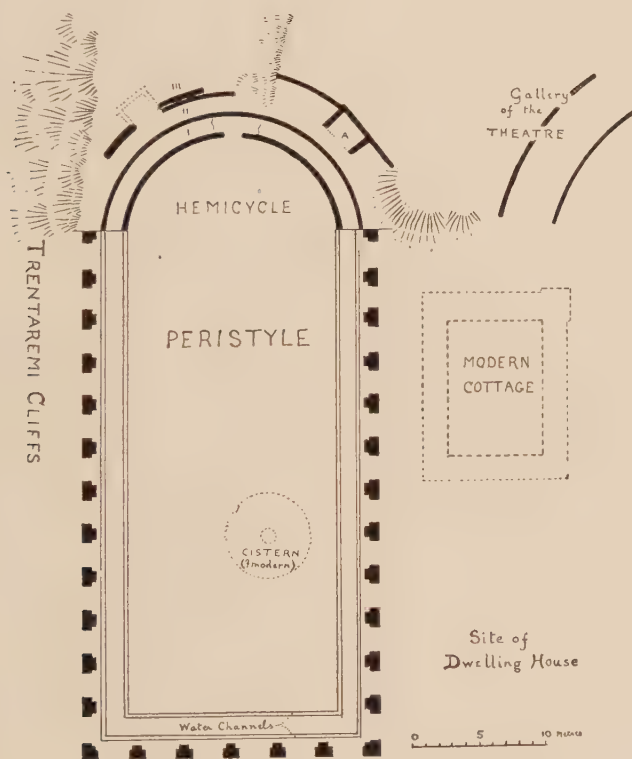


FIG. 23. GROUND-PLAN OF THE 'NYMPHAEUM' (partly after Fusco and Giampietri).

It consisted of a rectangular enclosure, court or peristyle, with an apse-like structure or hemicycle, rising in three concentric steps at the northern end.

The part now visible is in so ruinous a condition and is so encumbered with earth and smothered with broom and grasses, that it

is impossible to arrive at any certain conclusion concerning its purpose, but it is convenient to retain for it the name *Nymphaeum*, which was given to it by Giordano. Moreover, a great portion lies under a terrace, and much cannot be examined without disturbing a part of a garden. The site has not been completely cleared in consequence, and the ground-plan must be regarded merely as a reconstruction from imperfect data.

A general view of the site may be obtained from the top of a few steps at the western side of the hemicycle. A part of the eastern side is in its original condition, and one can make out the retaining



FIG. 24. WESTERN SIDE OF THE HEMICYCLE WITH COROGLIO CLIFFS AND THE ISLAND OF NISIDA IN THE BACKGROUND.

walls of concrete still holding back the friable soil of the hill-side: but on the western side the underlying soil has been washed by rain down the precipice into Trentaremi Bay, and much of the fabric has also fallen.

The hemicycle is formed by three concentric (?) walls, the risers of three high steps, which are about 6 feet, 12 ft. 4 in., and 18 feet respectively above the level of the garden or court. They are shown in section in fig. 25, I, II, III. Measurements of the width of the steps show discrepancies as between the east and west quadrants, which is no doubt partly due to unequal wear, to excavation, and perhaps to attempted restoration. The steps have an average width of about

6 feet, but seem as if in their original state they had become wider as they ascend. The exact dimensions of the structure in its present ruined state are difficult to obtain: and those published by Signori Fusco and Giampietri are exaggerated by about a third. The diameter of the innermost wall is about 51 feet in length.

The lowest wall is about 6 feet high by $2\frac{1}{2}$ feet thick. In the centre a breach has been made by the earlier excavators, laying bare the middle wall right down to the ground; it is set 6 feet back from the lower wall, and like other walls of the period is faced with opus reticulatum extending down to the level of the garden. It would

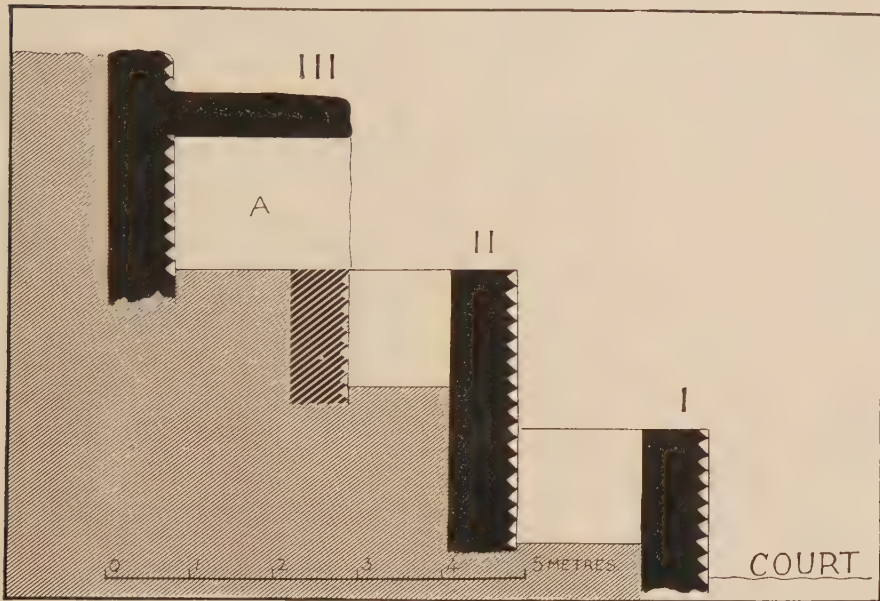


FIG. 25. RADIAL VERTICAL SECTION THROUGH THE 'NYMPHAEUM' HEMICYCLE.

appear as if a clear passage ran between these two walls of the hemicycle.

A wall, with reticulated face, encloses the top and served to hold back the soil of the hill. Under the third step or gallery is a small chamber, 6 ft. 10 in. wide by 5 feet high, very like a box in a theatre (fig. 26, A), and there is evidence that other similar chambers facing the centre of the hemicycle were built in this tier. These 'boxes' may have been the substructions of a gallery above.

The magnetic bearing of the hemicycle is facing about 23° west of south, i.e. it is turned about 17° more towards the west than the theatre, which was orientated to face south more truly.

The rectangular court was limited on the north by the hemicycle and on the other three sides by a portico, for at regular intervals of about $8\frac{1}{2}$ feet there is a series of pier-foundations, each about 3 feet across and with projections on their inner sides, which probably supported the columns of a portico. There were thirteen of these piers along the long sides, and seven along the south end of the court.

Inside the piers are two channels for water, carefully plastered and painted white and light blue. In 1907 we found that the southern



FIG. 26. EASTERN SIDE OF THE HEMICYCLE.

channel had been opened from end to end by a recent landslip and was likely to disappear with the next fall of rock.

The two dimensions $125\frac{1}{2}$ feet long by 78 feet wide given by Ruggiero probably refer to the rectangular area or court.

The level of the peristyle is about 9 feet below the level of the gallery of the theatre, which is at no great distance to the east of the hemicycle.

The purpose of the building is quite uncertain. The earlier excavators, no doubt influenced by its situation immediately adjoining both theatre and odeon, not unreasonably regarded it as a place of

amusement or of ornament, and arguing from the water-channels of the rectangle, believed it to have been a nymphaeum for the display of fountains and other ornamental water-works. Another theory is that the semicircular structure at the end may have been used as an auditorium for witnessing scenes within the court, but it is quite as likely that the three concentric steps may have served to support a group of sculptured figures, which constituted the central feature of the spectacle. This explanation of the purpose of the hemicycle is in accordance with our own view, namely, that the court is to be regarded as the peristyle of a house next the theatre, which was decorated by elaborate water-works and sculpture. We would suggest that fountains may have played over the steps, and that a sculptured triumph of Tritons, Sirens, &c., was displayed upon them. The throne of Neptune surrounded with his court of sea divinities may have been represented here, and the beautiful statue of the Nereid, fig. 164, might have originally been intended to fill a place in such a group. The fountain figures would have been seen from under the covered cloister of the court. It is probable that further excavation might show the course of the old water-pipes and drains and might thus yield other clues to the meaning of the various parts of the structure.

THE TEMPLE OR SACRARIUM

IN March, 1842, the papal Nunzio discovered a building, 25 yards distant from the south-east corner of the theatre, which was identified as a temple or sacrarium. Vaulted substructions raise the floor high

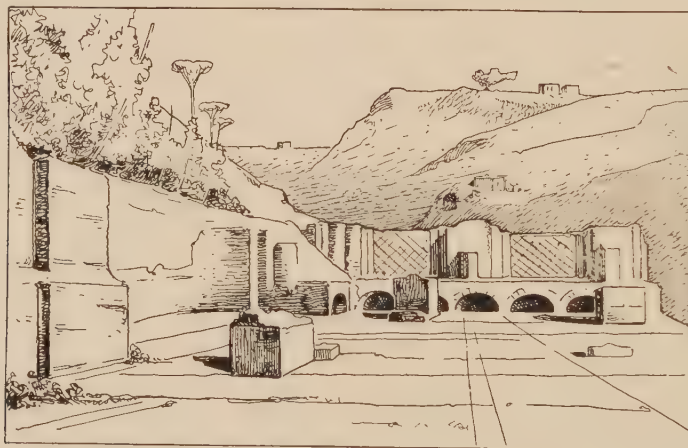


FIG. 27. THE TEMPLE. (From *Collina di Posilipo*.)

above the Vallone di Gaiola, sufficiently high to obtain a fine view of Vesuvius and the sea just over the vine-terraced ridge separating the Gaiola and Lampi valleys. The interior of the temple was cleared by the older excavators, but an abundant crop of weeds and straggling fennel plants has sprung up since and gives it a neglected though picturesque appearance.

The eastern end has fallen into the valley, but its position, at least, may be conjectured from the dimensions of the remainder and from the foundations of substructions which indicate the former existence of a terrace quite 7 yards beyond the eastern limit of the broken floor above. In our reconstruction of the plan of the building, the dotted circles are meant to represent columns of a portico which is not unlikely to have existed there.

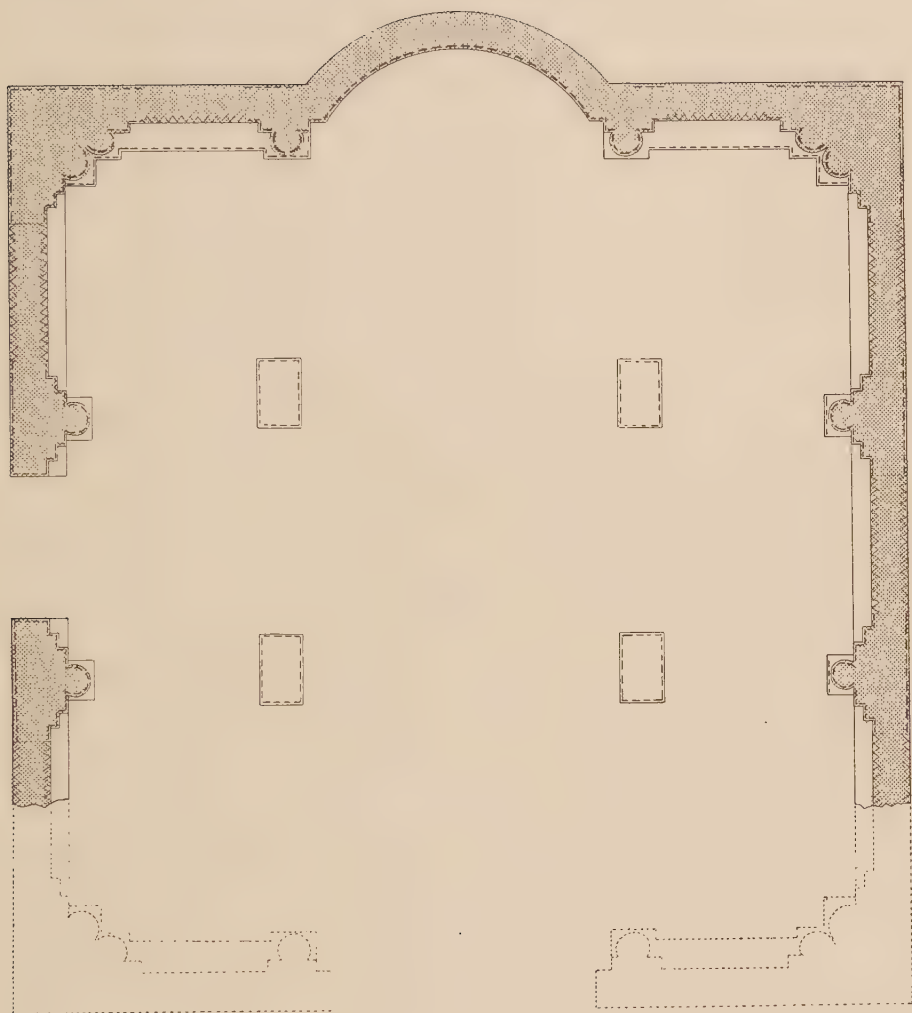


FIG. 28. PLAN OF THE TEMPLE, WITH SUGGESTED RESTORATION OF A PORTICO.

The building is of red brickwork with panels of tufa opus reticulatum, between brick-faced piers and brick columns in relief. The bricks used in the lateritium are 1.2 inches thick by 11 inches square; the interior was covered with fine white plaster.

There is a wide entrance, 7 ft. 10 in. wide, in the middle of the south wall. The walls now are nowhere more than 7 feet high, but reckoning from the diameters of the columns ($21\frac{1}{2}$ inches) would have exceeded 20 feet in height. At the western end an apse, 14 ft. 7 in.



FIG. 29. THE SOUTH-WEST CORNER OF THE TEMPLE.

across and $6\frac{1}{2}$ feet deep, is flanked by columns built of brick, standing out in two-thirds relief from the wall line; these, like the other columns, rest on a plinth $29\frac{1}{2}$ inches above the floor. In the corners the columns belonging to the end and side walls are conjoined.

On the middle of the floor and nearly, though not quite, in line with the columns against the walls, are four rectangular piers cased in opus lateritium and measuring 3 ft. 11 in. by $29\frac{1}{2}$ inches. They seem to have been pedestals for statues, for had they supported a roof they should be more strictly in line with the columns against the walls.

The outside of the south wall is buried under the vineyard soil, but the north wall, standing free of earth, shows clearly that the

substructions, if not the upper part of the building, extended further in that direction, so as to form a wing disposed symmetrically with one on the south side.

The only architectural details unearthed by the excavations of 1842 were :

A white marble cornice with brackets, rosoni and cornice-mouldings finely chiselled.

An architrave of African breccia.

A shaft of rosso d'Egitto found between the theatre and the temple.

Two shafts of columns of bardigliano marble and the half of a third.

Two shafts of dark grey marble 18 inches in diameter, not more than 11½ feet in height.



FIG. 30. SUBSTRUCTION UNDER THE FLOOR OF THE TEMPLE.

An elaborate Corinthian capital, 18 inches high, belonging to a column of about 13 inches in diameter. (See No. 33, p. 226.)

Six broken door jambs, 1 foot wide.

None of these, with the possible exception of the door jambs and the cornice, appear to have formed part of the main architectural fabric ; but in the apse there may well have stood a shrine or aedicula, in the construction of which marble would have been employed.

Within the building are certain constructions of modern appearance, which show that it had been adapted to other purposes than those originally intended, even before the excavations of 1842. Along one side is a bench supported by three or four rough arches of tufa, very like a Neapolitan cooking-range (fig. 27) ; the floor too, is traversed by a modern drainage channel.

The substructions, built of opus lateritium and reticulatum, extended further than they do now. On the ground floor a large room covered by a vault, 15 feet high, is now used as a barn or outhouse, and over this is a second, but lower, vaulted chamber about 7 feet in height, with walls faced with brick, upon the top of which rests the central part of the floor of the temple. It runs east and west, crossing another vault at right angles; but most of this latter, with the west end of the temple which it supported, has fallen into the valley below, perhaps as the result of an earthquake. Beyond the north and south walls of the temple and on a level with the upper substructions were other vaulted chambers, over which apparently a terrace ran round the main building.

A row of chambers with barrel-vaults springing east and west, built in tufa-lateritium and having the same orientation as the temple, stands under the steep slope to the south-east. Five of them, having been repaired and fitted with doors, are now used as cellars. They may have formed the substructions of a wing on the level of the temple floor, or of an extension of the terrace towards the south-east, thus forming an integral part of the eastern elevation of the temple buildings. Two larger chambers, lined internally with reticulate work and with barrel-vaults springing north and south, occupy the corner between the row of five cellars and the temple.

These substructions on the 'ground' floor were not raised much above the level of the roadway at the bottom of the valley: a stairway would probably have led from them up to the level of the temple floor, 30 feet above, but there is now no clear indication of its exact position.

Nisida

Cape Coroglio



FIG. 31. SITE OF RUINS ON THE CLIFF OVER TRENTAREMI BAY.

THE RUINS BETWEEN THE ODEON AND THE BELVEDERE

THE southern end of the Gaiola Ridge, always higher on the west than on the east, attains its greatest elevation just behind the auditorium of the odeon. The crest, at first spread as wide as the odeon buildings, narrows as we go southward until it is reduced to a mere rough bank, overgrown with a scrubby vegetation, and dividing a small cultivated plateau from the precipice on the side of Trentaremi Bay. Many ruins, jutting out at intervals along the top of the cliffs, show that an almost uninterrupted line of buildings formerly extended along the summit of the hill, but many of them have already fallen, with the rock upon which they stood, into the Bay below. The positions and orientation of some of the walls are shown on the Map, but a more complete working-out of ground-plans is still left for future diggers.

On the brink of the precipice behind the odeon and some 6 feet down the cliff-face are the plastered walls of a room *a*. A few yards to the east a vaulted chamber *b* has already been ransacked for antiquities and is partly filled in again. Further south other walls *c* are to be seen, threatening to collapse with the cliff side. Between two plaster walls we noted a step *d*, 2 feet in height, covered with plaster painted black, very like the plastered step, painted red, on the Scoglio di Virgilio mentioned on page 142.

At this point the ridge dividing the cultivated land from the abyss narrows to about 4 yards and is raised about 20 feet above the vines below. Further on, where the ridge becomes 8 feet lower, a wall *f*, 9 feet long, crosses the ridge bearing 8°, and beyond it at a distance of 13 yards may be seen the walls of two rooms *g*, *h*, with a doorway 5 feet wide; the second room *h*, measuring 30 feet by 18 feet, is now planted with vines. Nowhere do the clumps of *Lentiscus* flourish more vigorously than among these ruins.

A ruined vault *i* may be seen in the cliff-side a few yards further on, and to the east is a deep hole *j*, the result of former excavations, which needs re-examination.

Somewhat lower down and 15 yards off is the 'Belvedere'.

House of Pollio.



FIG. 32. PANORAMIC VIEW OF THE WESTERN SIDE OF THE GAIOLA VALLEY.

THE HOUSE OF POLLIO

At a distance of rather more than 50 yards east of the odeon is a piece of rough ground like a small rectangular plateau, standing high above the valley of the Gaiola on the north and east, and raised about 15 feet above the vineyard to the south. The ruined walls and rubble with which it is surrounded mark it as a site of importance, and, while affording a passive protection from the mattock of the cultivator, have been a happy hunting-ground for grubbers in search of antiquities. Both hill-side and summit are covered with a light wood of copse oak.

The old builders found it necessary to strengthen the steep slopes with retaining walls and arched substructions, massive remains of which bear enduring testimony to the weight of the buildings above. From the top, 130 feet above the sea, there are fine views up and down the Valley of the Gaiola and across to Vesuvius. It was the site of the largest dwelling-house yet discovered here, and we believe it to have been the principal house of the Villa Pausilypana. We name it the House of Pollio.

Our identification has been partly suggested by the fact that in the larger villas of the Romans, or for the matter of that in so many villas of the Renaissance, the principal dwelling-house was built upon the most elevated part of the grounds, both with the intent that the view might be extensive and varied, and also that as much air as possible might blow through the apartments during the summer heats. Pollio would have been more than likely to have put his house in such a position

Ubi gratior aura
leniat et rabiem Canis et momenta Leonis.
Hor. *Ep.* i. 10. 16.

Of the upper storeys nothing remains but scraps of partition walls. At the western end are a couple of reticulate tufa walls *a*, about a yard apart, which run parallel for a space of some 14 yards: the innermost is of interest, in that it shows a doorway in a tufa wall, into room *b*, filled up with later brickwork.

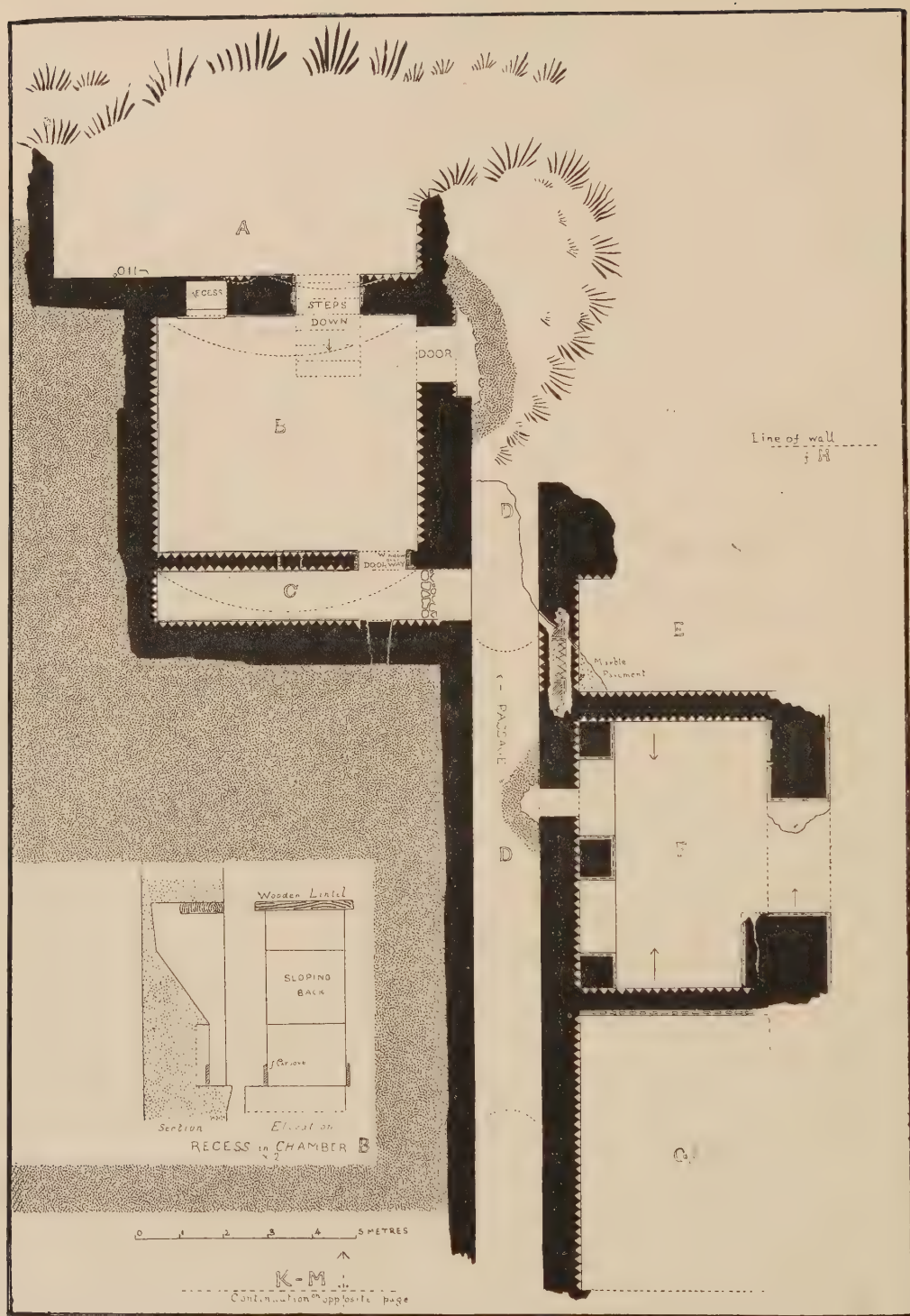


FIG. 33. HOUSE OF POLLIO.

At the north-east corner a large room was floored with a fine pavement 6 inches thick, with a polished facing of coloured marble fragments very like, and probably coeval with, that in the Scoglio di Virgilio building. Remains of newer construction in brick, *ee'*, indicated in the upper right-hand corner of fig. 36, rested directly upon the top of this pavement; and inasmuch as the vault over the chamber F underneath has been strongly underpinned, it may not unreasonably be inferred that substantial additions and alterations were made on

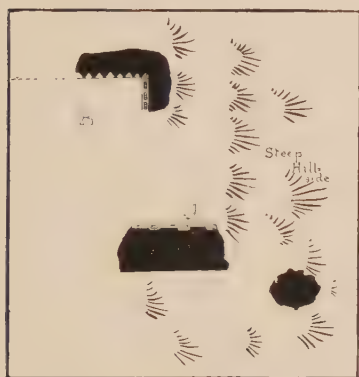


FIG. 34. WALLS TO EAST.
Drawn to the scale on fig. 33.

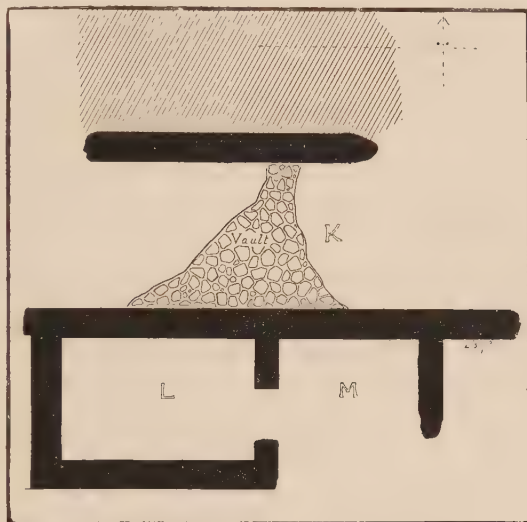


FIG. 35. ROOMS TO THE SOUTH OF THE
HOUSE OF POLLIO.

this side of the house: the later work being generally in brick, like the aforementioned filling of the doorway.

Several of the rooms on the lower storey, in a fair state of preservation, are shown in plan in fig. 33 ; but there are many others which are so much encumbered with the débris of fallen vaults and roofs, that further excavations are necessary. For the most part the walls have lost all traces of colour, and scraps of pigment or moulding on detached fragments of plaster are too often the sole clue to the nature of their former decorations.

Along the southern side several small dismantled chambers and passages (C-G, K, L, M) may be made out: others lie deeper in the hill-side and deserve further exploration.

On the side overhanging the valley to the east are some larger apartments (E, F, G). Their doorways faced east; that of the middle chamber F being 9 ft. 6 in. wide and arched over. This chamber,

which is more complete than the others, has been greatly diminished in size by the introduction of massive piers and arches for underpinning the vault, which is evidence in favour of the addition of a heavy superstructure upon the floor above. Chamber F was originally a plain square room with reticulate tufa walls, plastered over. The east wall has been strengthened by brickwork and concrete; a pier, 6 feet through, being raised on either side of the archway; and at the back of the room three other piers, each a yard square in plan, were built of tufa lateritium in $4\frac{1}{2}$ -inch courses, which



FIG. 36. HOUSE OF POLLIO. ROOM F.

piers carried two brick-faced arches, resulting in the production of two alcoves at the end of the room. Under one of the arches a small opening leads into the passage DD, now choked with débris. Two fragments of a fine fluted alabaster column (No. 19, p. 222) were found among the débris of this room.

The work clearly belongs to two if not to three periods. The reticulate tufa-faced walls belong to an earlier period, the abundant use of brick to a later period; and at certain points we believed it possible to make out that patches of masonry, built of two courses of brick alternating with one of tufa, had been inserted after the completion of the adjoining reticulate wall.

The north wall of room G is faced with tufa lateritium, and may therefore be referred to the earlier period.

About 20 or 25 feet down the steep hill-side and some 6 yards east are the ruins of a lower storey H, J: the construction is of the earlier period. Here we found mosaic cubes, pieces of rosso antico marble, and much brilliantly painted plaster, silver-grey and bright blue being the predominant colours. The wall J is faced with two courses of brick alternating with one course of tufa.

Along the north side are other rooms. The principal one B stood



FIG. 37. HOUSE OF POLLIO. WALL BETWEEN ROOMS A AND B.

a little back from the north front of the building: and the two flanking walls on either side of A may have been formerly spanned by a wide arch. By the entrance, two relieving arches have been built in the wall. The wider one spanning the doorway has been partly replaced by a patch of reticulate work clearly shown in the photograph. It is an interesting case of where a defect in the older masonry has been made good by work of a different character, which has been carefully executed notwithstanding the fact that the whole was soon to be concealed by plaster. The door jambs were constructed at different times, that to the left being faced with alternating courses of two bricks and one tufa stone, the three measuring 9 inches; the other on

the right is built of brick only, the bricks being 9 inches square, and taking $4\frac{1}{2}$ courses to rise 9 inches. The latter is believed to be the more recent of the two.

This doorway leads into the Painted Room.

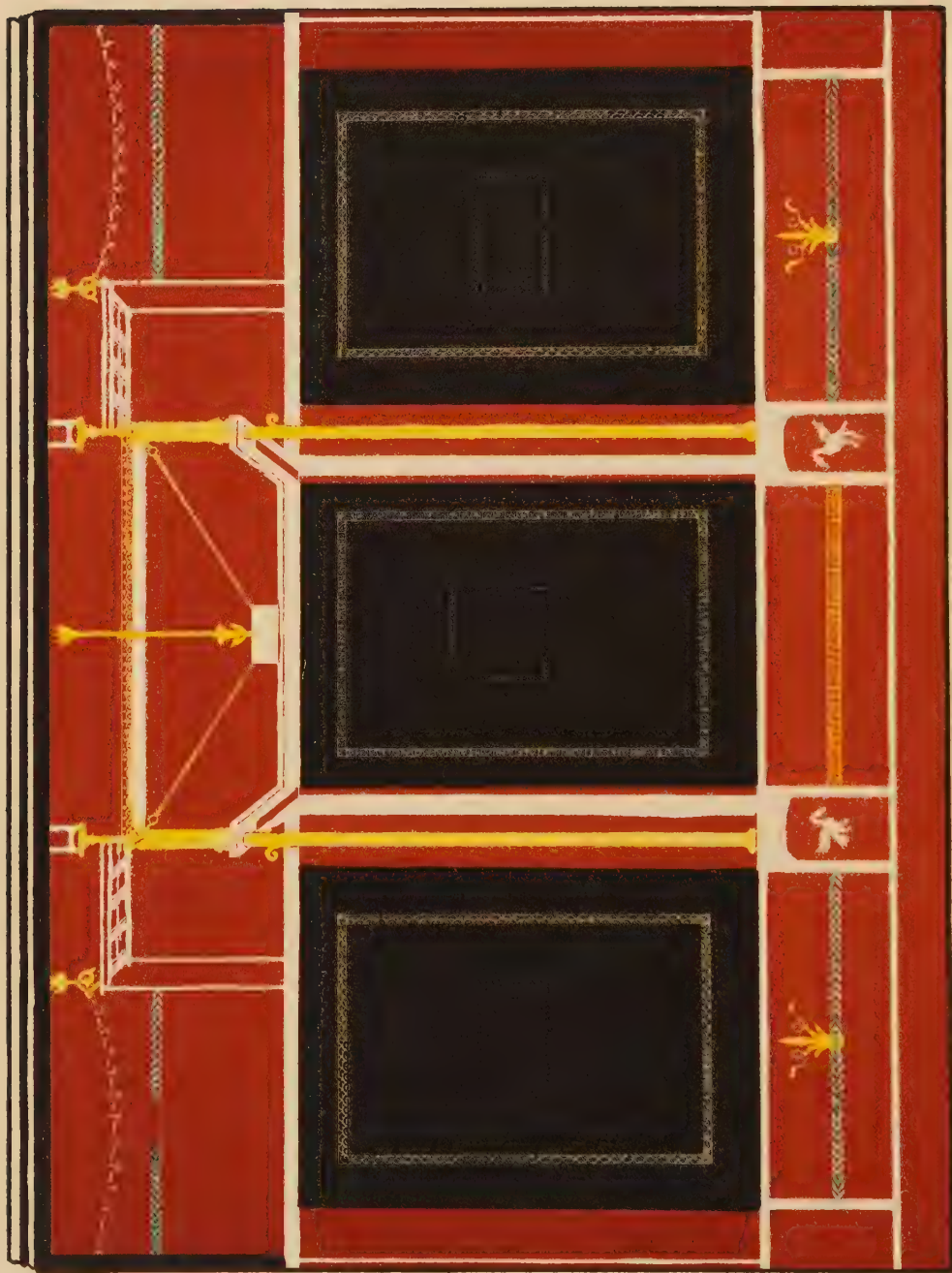
THE PAINTED ROOM

Within room B sufficient portions of the painted plaster have been preserved to enable us to form a tolerably complete notion of the main outlines of the mural decorations.

The room, very nearly square, 19 by 18 feet, is covered by a low-pitched barrel-vault. The side walls measured to the spring of the vault are 13 feet high: the end walls, following the curve of the vault, rise 3 feet higher. There are doorways through the north, east, and south walls, and a small square window close to the ceiling in the middle of the north wall. The doorway in the north wall has been partly blocked by a modern flight of six steps, leading down to the floor, four feet below the accumulated débris outside; the south doorway, spanned by a horizontal lintel, with a window over, opens into a narrow passage-like chamber c beyond, plastered with fine white plaster, and lit by two small window openings in the party-wall; and it is ceiled by the same vault as the larger room. It no doubt originally communicated with the rest of the house by a long vaulted passage dd, into which the third door in the east wall also opened, but the way is now blocked by some rough masonry of a later period. An angle in the masonry may be distinctly seen in the south wall opposite the entrance.

Another feature which must be mentioned is a singular recess to the right of the entrance (fig. 40, and shown as an inset in fig. 33), measuring some 3 feet in width by 6 in height, with a narrow bracket painted black and projecting slightly beyond the wall line. It appears to have been used as a cupboard, and, though cutting into the scheme of decoration, to have been a part of the original construction of the wall. The aperture may conceivably have been closed by a wooden door upon which the mural decoration was continued. The cupboard is deeper above than below. For the middle third the plastered back is sloped out towards the room. The back of the lower portion appears to have been covered with marble.

The scheme of decoration of this room is of a familiar Pompeian architectural type.



R. T. G. del.

WALL PAINTING IN THE HOUSE OF POLLIO ON POSILIPO.

Preh. Acad. Oxon. lith. et imp.

The wall space below the cornice is primarily divided into the three usual areas by two horizontal bands, which delimit the principal area from the dado beneath and from the frieze above. On each wall the area is still further subdivided into the three panels, so characteristic of mural decoration of the Pompeian period, and of which the origin has been traced to the conventional tripartite division of the proscenium of the classic stage.

The cornice is of plaster, 5 inches deep, and is divided longitudinally into three divisions like an architrave by bead mouldings.

The north and south walls are continued up to meet the barrel-vaulting, so that between the top of the frieze and the cornice, lunette spaces are enclosed.

The west wall is not pierced by any doorway or other opening; and so, as the painting upon it is also the best preserved, we may begin with a description of it.

The West Wall.

The *Dado*, in Pompeian red, is 31 inches high. Above a 'skirting' of 10 inches in height, the dado is divided into three spaces by two white-framed panels, each representing an arch supported by two piers, between which flies a white swan; the whole panel is represented as supporting the tall, slender columns which form part of the architectural decoration of the wall above the dado. Very close parallels may be found in the paintings of many a Pompeian house, notably in those on the walls of the House of Diomed, which resembles this one in having also been a country villa.

Across the middle of the red side-spaces of the dado, from panel to panel, a narrow olive-green wreath supports a central, yellow, foliated ornament; in the middle space the wreath is replaced by a straight band of a conventional pattern of yellow rectangles enclosing flowers (fig. 38, c).

The dado is divided from the main wall-space by a white band, $1\frac{3}{4}$ inches wide, which, like the narrow white skirting line, runs all round the room at the same level.

The Wall-Space.

The principal part of the wall-space rises from the dado to 9 ft. 4 in. above the floor, and also is divided into three black panels by an architectural motif.

The left side-space is decorated as follows. A red band ($1\frac{2}{3}$ inches wide) runs up the corners of the room; this is divided by a narrow

white line from a broad red band, bordering the large black panel, measuring 6 ft. 4 in. by 4 ft. 8 in., which is contoured by a thin white line, and bears an inner yellow frame, $1\frac{2}{3}$ inches wide, of a fan pattern *b*. Within the frame was a small picture (12 in. by 20 in.), recently removed.

The right side-space is similarly treated, but the middle black panel is bordered by two vertical greenish lines, and the design of the yellow



FIG. 38. DETAILS OF PAINTED BORDERS. HOUSE OF POLLIO.

frame is different (fig. 38, *a*) and the picture was square ($15\frac{3}{4}$ by $15\frac{3}{4}$ in.). A hole in the plaster of the third panel, indicating a looted picture, measures $19\frac{1}{2} \times 12$ inches.

The three spaces are divided by two columns, shaded white and cream. The bases of the columns rest upon the plinth-like, white-arched panels of the dado, and the upper ends are carried up on to the frieze.

This, the main scheme of the decoration of the wall, is divided from the frieze by a white band, $2\frac{1}{2}$ inches deep.

The Frieze.

In the centre an oblong pedestal supports a tall yellow candelabrum with vase-like base, and from the corners of the pedestal two yellow thyrsi lean in a slanting direction against the backs of two white canopies, spread back to back over the columns. The canopies are connected by a yellow band of fan pattern ornament, which is stretched in front of the candelabrum.

Of the two pillars supporting the back of the canopy, the nearer is surmounted by a yellow capital and is continuous with the detached column, the full relief of which is made conspicuous by an oblique bracket painted above the capital.

The roof of the canopy is supported on longitudinal rafters let into four transverse joists.

Above the foremost pillar of the canopy is an ornament, a candelabrum-like pinnacle ending in five 'flames', to which is tied a garlanded festoon, which stretches across to the black band near the corner of the room. Lower down, a second band of green foliage tightly spans the same space and supported a central figure, perhaps a bird, which has been removed.

Around all, runs a black band with a thin white bordering, which is continued across the top and down the sides.

The scheme of decoration of the opposite wall was apparently identical, and though less complete owing to the existence of the doorway to the passage, yet the mural painting is less mutilated, probably because owing to the indistinctness of the small paintings on the black panels, no vandal has hitherto considered them as being worthy of removal. Their prevailing ground tints are blue and green; they may have been marine views.

The North and South Walls.

The north and south walls were treated alike, though with a scheme of decoration differing in detail from that of the east and west walls. The middle dado space of the north wall is crossed by a yellow band of conventionalized arch pattern, fig. 40.

The middle black wall-space is flanked by two yellow columns standing over the swan panels and terminating in the frieze in highly ornate candelabra-heads, upon which rest the same inverted crescentic objects  seen in a Pompeian Fountain Mosaic in the Naples Museum, fig. 39. Above the crescent is some six-rayed object, and over it depends a white bordered banner hanging from the cornice, a

decoration not infrequently found in other frescoes of the period. To the shaft of the pole is attached a band of conventional geometric pattern (*a*). Near the corner of the room a yellow column and two pinkish pilasters carry a canopy surmounted by a winged seated figure and two candelabrum-heads as finials, to which a green garland is bound. Lower in the frieze, two pheasants, *regardant*, perch upon upturned scrolls.

The red-painted lunettes (north and south) are surrounded by the white plaster cornice-moulding and black and yellow lines. Each was decorated by two symmetrical paintings which have been neatly cut out of the plaster.

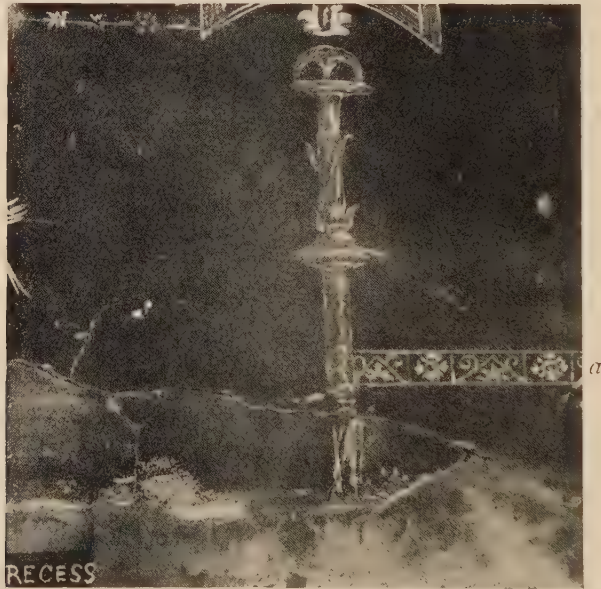


FIG. 39. FRESCO ON NORTH WALL.

The Ceiling.

The ground colour of the vaulted ceiling is red ; it is outlined at the spring by the white plaster moulding already mentioned, and this is thrown into further relief above, just as it was below, by a broad black band edged with a thread of yellow.

Within a plain yellow border, lined with white, are four square green frames containing decorative figures; only one of which, a winged horse, now remains. The green frames are connected to

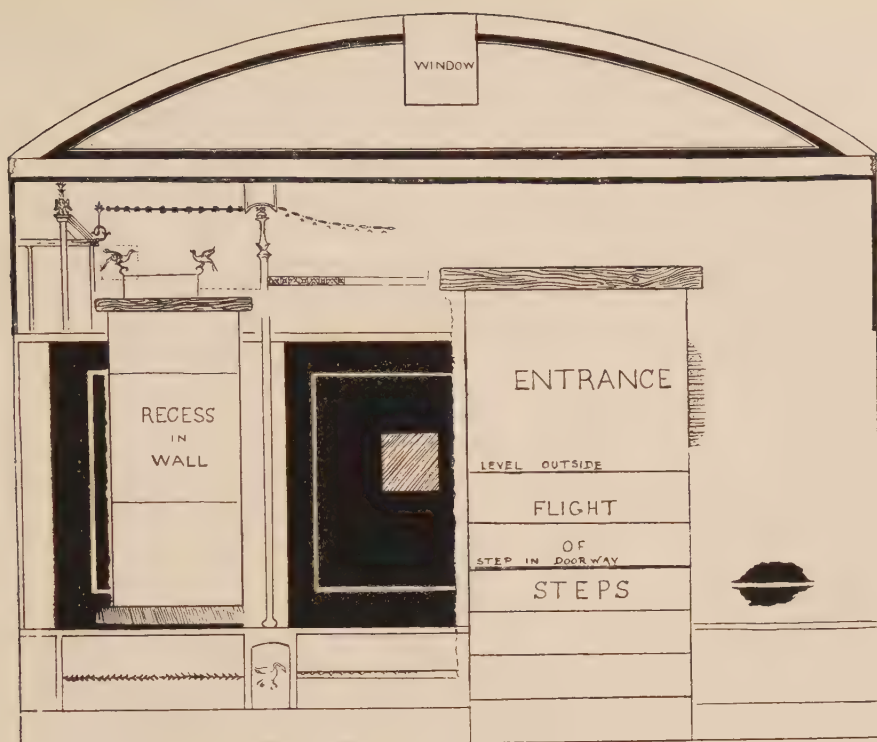


FIG. 40. NORTH WALL.

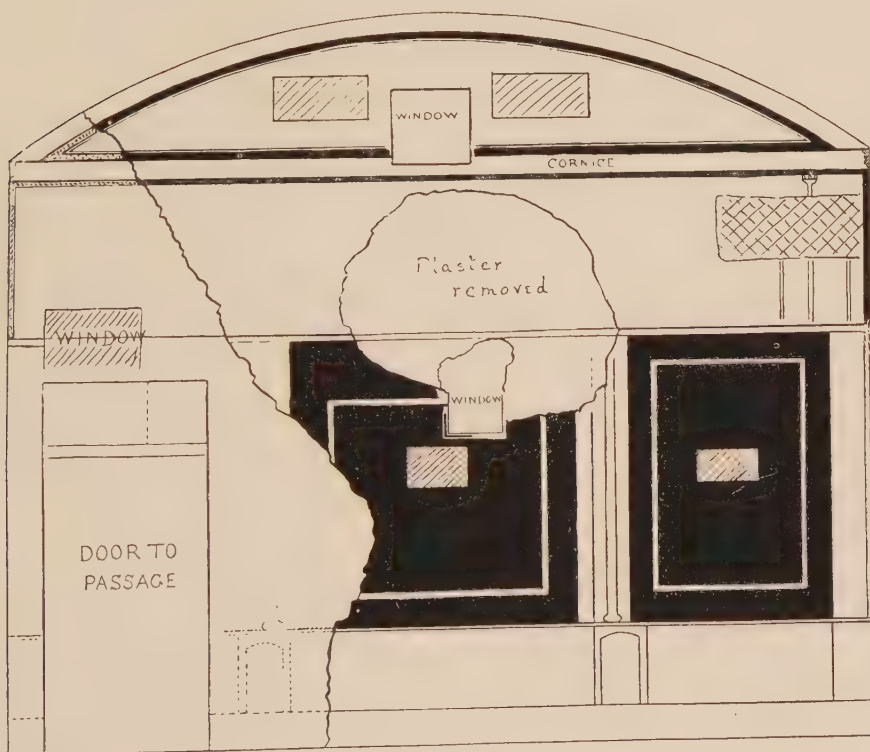


FIG. 41. SOUTH WALL.

one another by three straight decorated bands. The swastika in circles, alternating with a diamond ornament with a spot, is the pattern on the outermost of the bands fig. 38, *d*; it is painted in yellow on the red ground, 2 inches wide, and is continued to the outer yellow border. The middle band is formed by a dark line relieved by two lighter lines, with a beaded ornament along the upper one.

Unfortunately a great piece of the plaster has fallen from the middle of the ceiling, and so, much of the decoration is lost: the rest of the painting is faint with age and damp. At least one of the central figures in the green squares has been intentionally cut out, but, let us hope, may, with the other missing paintings, be yet traced in some collection of antiquities.

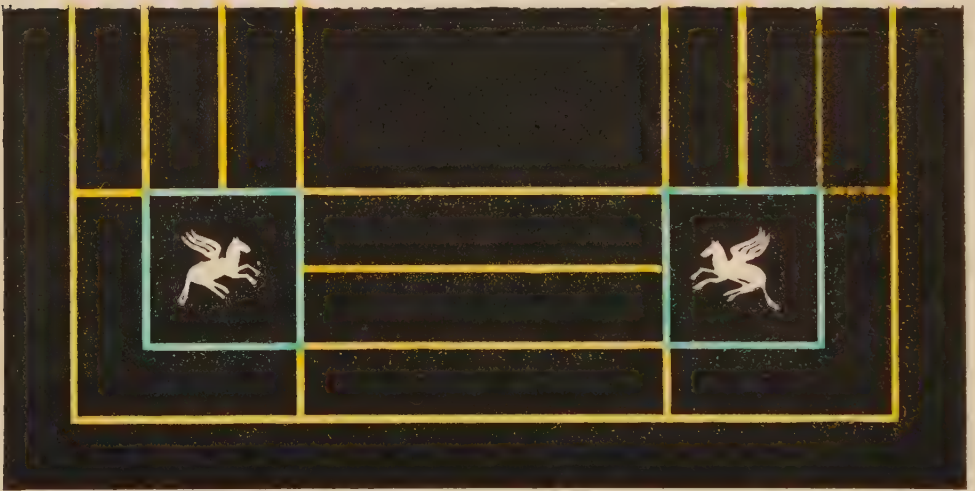


FIG. 42. HALF OF THE CEILING DECORATION.
The Background should be *red* instead of black.

The general style and scheme of the mural paintings in this room so clearly resemble that which we know to have been in fashion in Campania, especially in country houses, before A. D. 79, that it is easy to assign this as their approximate date. It is impossible to believe that the very close resemblance of the minutest details of the decorations in the Villa Pausilypon and in that of Diomed and others at Pompeii could bear any other reasonable interpretation than that of contemporaneity; and unless it be a case of deliberate archaism, we certainly cannot attribute the execution of these mural paintings to the later days of the Empire, as has been suggested by some.

Attention may be drawn to the following points of resemblance.

An ornament like that on the ceiling is depicted in Niccolini, pl. LVIII, where we see a similar border without the swastika, but with the alternate diamonds. The fan border was not uncommon in Pompeii: it is associated with a green foliated band in the house Reg. IX, ins. vii, pl. III.

The thyrsi and corner scrolls are of frequent occurrence, as for instance in the Pompeian Lararium figured by Overbeck, fig. 146, and a similar altar-motif as a decoration occurs in the House of the Centenary. Fresco No. XXII in the House of the Centenary combines several of the architectural elements of the Gaiola paintings with the fan border, the foliated band, and the twisted scroll finials. The candelabra have been regarded by Mau as a distinctive feature of his 'candelaber-styl' or fourth Pompeian style.

On the other hand, the perfection of the preservation of these paintings at the time of their discovery would seem to need further explanation. Unlike Pompeii, the Pausilypon site was not buried up and preserved by the eruption of a volcano. A long-continued habitation of the house during the centuries that Imperial Rome survived Pompeii would assuredly have ended in the effacement of these wall paintings or in their replacement by others. We must therefore suppose that the lower rooms were not in use for long, perhaps other rooms were built over them, and that when the upper storeys fell in ruins, possibly as the result of an earthquake, the lower rooms got buried and preserved under the débris.

The room is now used as a shed for faggots; and damp having found its way through the 6 feet of superincumbent soil and concrete vaulting, is slowly but surely causing the decomposition of the colours on the walls. This is particularly the case on the east wall, where the salt in the plaster has effloresced with the damp, and has in places given rise to a very remarkable double effect; as, for instance, on the conventional borders of the panels, in which, by the salts and damp, the pattern has become raised so neatly and clearly that the design is in relief, and also the original colouring has been reversed, so that the yellow has turned black and the black, white.

If certain scattered fragments found down the slope below the house may be accepted as evidence, some portion of this building seems to have been provided with hollow walls for heating, for amongst the other débris were several fragments of tiles, with legs, such as those with which the hollow inner walls of *sudatoria* are formed. These tiles are not quite of the same pattern as those used in

the circular sudatorium, to be presently described, but have stouter and more mammillate legs. The legs are perforated for the iron nails or holdfasts by which they were fixed against the wall, and in this respect resemble the tiles fixed in the hot room of a private house in the Vicolo del Gallo in Pompeii, though they are of different manufacture. The tiles used in the circular sudatorium of Posilipo exactly resemble those employed in the public Baths near the Forum of Pompeii. Some fragments of a large *dolium* lay in a room not far off.

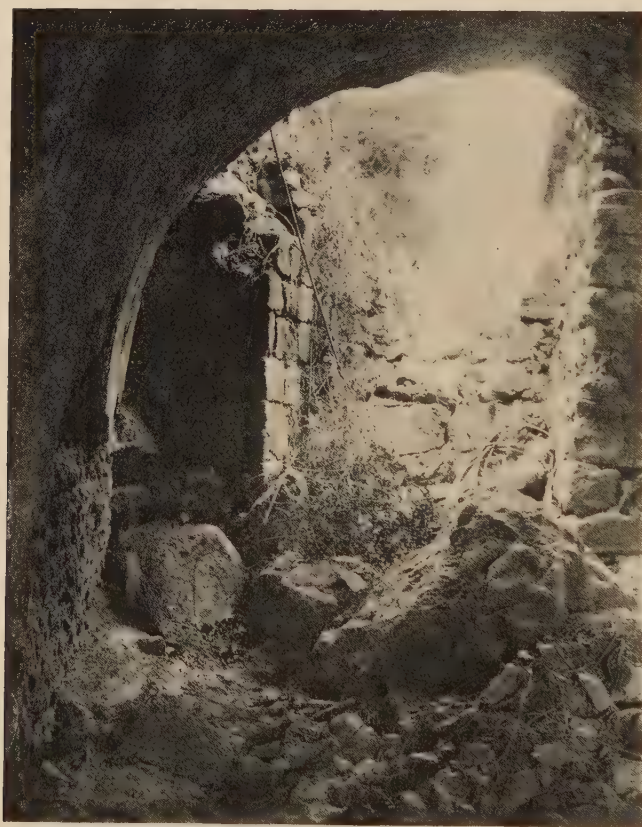


FIG. 43. UPPER END OF THE TUNNEL.

THE TUNNEL ON THE VALLEY ROAD

BELOW the House of Pollio the level of the valley-bed drops abruptly, and the torrent bed, along which surface-water runs in wet



FIG. 44. SOUTH END OF THE TUNNEL, WITH VAULT A TO THE RIGHT.

weather, hitherto confined in a narrow channel with stonework sides, discharges into an old tunnel, the floor of which has been buried deep in accumulated silt. As every square yard of fertile soil in this sheltered valley is of value, the farmer has partly blocked the torrent bed by a wall of large grey tufa blocks, built across the upper end of the tunnel, thus holding back the loose soil above, with the result that the present arable area is at a height of several feet above the level of the valley-bed as it was known to the Romans.

The tunnel is 15 yards in length and 12 feet high by 11 feet wide, and therefore of much larger dimensions than would ever have been needed merely to allow storm waters to drain away to the sea: it is our belief that through it passed the old road from the Grotta di Sejano down to the harbour. The interior shows signs of having been plastered.

A straight joint, crossing about 5 yards from the upper end, proves that the tunnel was at first only 5 yards long, but was subsequently lengthened by 10 yards. It is all built of concrete faced with opus reticulatum; but whereas the angles of the more ancient portion of the tunnel, τ , were formed in tufa lateritium, worked in three 4-inch course ashlar, as may be seen to the north of the straight joint, the angles of the later work, τ' , as in the case of so many other buildings on this property, are formed in brick lateritium. On the roof of the tunnel is a pavement of crushed brick, which is now buried 3 feet below the vines growing above.

The arch over the exit of the tunnel is faced with red bricks, the sides being faced with alternate courses of brick and tufa lateritium: two courses of brick to one of tufa (fig. 44). From below upwards there are six courses of brick, then for 5 ft. 2 in. five courses, each consisting of one tufa block and two bricks, then six courses of brick; and then the spring of the arch, which rises about 6 feet in the middle.

The Tunnel Vaults.

On emerging from the tunnel the roadway was flanked by at least four large and deep vaults, of which two are still in a fair state of preservation.

On the east an entrance of tufa and brick lateritium, of the same date as the exit from the tunnel, leads into vault A, 32 feet deep by 19 feet wide, the most interesting constructional feature of which is the method of the intersection of the four somewhat flat barrel-vaults of the roof. The walls are reticulate, with a course of brick at the spring of the arch. A wide aperture opens into an adjoining and similar chamber B to the south, but this is so buried in earth, washed in by the torrent when its bed was higher than at present, that the exact dimensions have not been determined.

There is no indication of the purpose for which these vaults were built, but failing any other suggestion, and judging from their position on the roadway, they may have been used as stables or cart-houses,

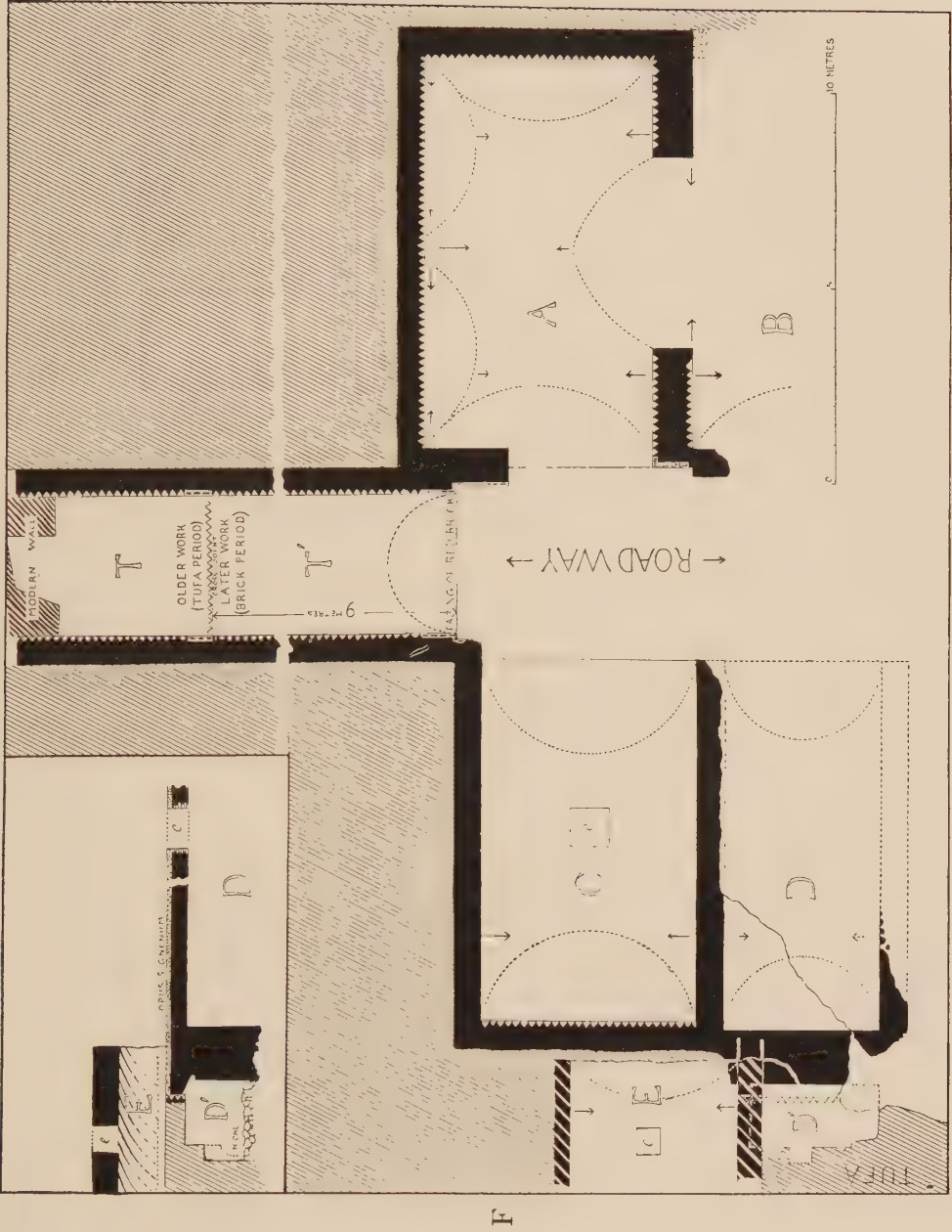


FIG. 45. PLAN OF TUNNEL AND VAULTS.

perhaps as *raedae receptacula*, or at any rate as substructions for buildings above.

On the west side two other chambers, *c* and *d*, are covered by simple barrel-vaults, which rise nearly 2 feet higher than those on the east side. The vault of *c* is perforated by a square man-hole or skylight *c* that led up through a floor of opus signinum above, as is shown as if it were above *d* in the section in the inset in fig. 45. This floor extended over the neighbouring vaults and was approximately on the level of No. 3 tier of substructions (p. 83).

These cave-like vaults on the west are partly excavated in the solid rock, partly built up with concrete and faced with opus reticulatum.

The chamber *d* to the south appears to have extended further into the hill in its original state, but its length has been shortened by a massive wall, built across the vault, so as to divide off a small low end-chamber, *d'*. Chamber *d'* is partly hollowed out in the solid rock, partly roofed over by a roof of red tiles resting in lean-to fashion against the front face of a reticulated and plastered wall. In the rock at the back is a small oblong recess with three niches, one rectangular, one semicircular, and all plastered.

It appears likely that this was a burial chamber partitioned off at the back of the large vault, but at the same time the thickness of the transverse wall would indicate an intention of supporting the added weight of later buildings above.

All chambers on the level of the tunnel lay partly under a floor of opus signinum. Above this and under the western hill-side, two low vaulted chambers *e* and *f* of an upper storey deserve further excavation. The crown of the vault over *e* is about 3 feet thick and is perforated by a rectangular 'skylight' *e*, like the one over *c*.

The purpose for which the tunnel was built would appear to have been to secure an adequate bridge of communication between buildings on the opposite hill-sides and thus to avoid the inconvenience, as well as the publicity, of a descent to a public thoroughfare below.

The original bridge of the 'tufa period' was only 5 yards wide: the later one was 15 yards wide. The large lateral chambers undoubtedly belong to the same period as that of the extension of the tunnel.

A tomb, of which there is a further description on p. 197, was unearthed not far from the upper or north end of the tunnel. It was found very deep below the present arable surface, a further indication of the rise which has taken place all the way along the bed of the valley.

From the tunnel the roadway descended with uniform gradient

to the harbour. On either side may be seen vaulted chambers and retaining walls to support steep and friable hill-sides, which could not otherwise have safely carried the great masses of building above without fear of landslip.

At one place a subterranean passage leads right through the hill down into one of the quarry caves of Trentaremi.¹ Its exploration is not difficult, but should not be attempted in one's best clothes.

¹ The western exit has been indicated in the plan of the Caves in *Earth Movements*, pl. 48, and the passage is shown in the large map at the end of this volume.

THE EASTERN SUBSTRUCTIONS AND TERRACES¹

THERE are vaulted substructions everywhere along the western slope of the Gaiola valley. Thick retaining walls and vaults of concrete springing from walls faced with opus reticulatum extend for many yards, and even in their present ruined condition strongly uphold the hill-side. When complete the effect of this pile of building must have been imposing. It must have presented an appearance very like that of certain frescoes of large edifices built around and beneath with terraces rising step-like one above the other in a graduated series (cf. *Archaeologia*, lviii, p. 6, fig. 1). And here we find no less than five or six such successive terraces carried on substructions, the massiveness of which reminds one of the concrete work of modern civil engineers.

Of the lowest building of all we have no detailed information, but I have been informed that walls and pavements are buried some 12 feet deep below the surface of a garden. The accumulation of soil here is one of the consequences of the subsidence of the land, of which adjacent ruins buried in the sea-beach afford the clearest evidence. Owing to the rising of the beach, soil washed down the valley has not been able to reach the sea, and has accumulated in the valley bed. We may therefore look upon the walls at the garden level (fig. 46), in which the glass mosaic was found, as not belonging to the lowest or 'basement' floor (I), but as belonging to the 'first floor' (II) of the whole series of constructions.

There is evidence that in front of this wall there existed a row of arched vaults carrying the terrace of the second floor (III) at a height of 19 feet above the first, but of these vaults only parts of two piers remain, though outlined on the face of the back wall are the scars of arches and of several other piers. Six yards beyond the first pier and within a vaulted chamber that was next but one to it, is a rectangular niche containing a beautiful glass mosaic. The walls of the chamber

¹ Reprinted, in part, from Günther, 'A Mural Glass Mosaic from the Imperial Roman Villa near Naples,' *Archaeologia*, lxiii, 1912.

were plastered and painted in the manner to be presently described.

Some 10 yards further north at the present ground level, and choked with rubbish, are three other niches of varying heights (3 ft. 6 in., 2 ft., 2 ft. 6 in.), but without decoration. Then comes the remaining pier, and at 11 yards beyond that, another small niche, and 6 yards further a modern retaining wall which holds back arable soil in the valley bed (fig. 46).

The arches on this tier (II) were about 13 feet in height. They supported a terrace which has been raised to form a garden walk. On this terrace (III) and standing back is a second tier of vaulted substructions, of which the two southernmost chambers (fig. 47, A_3 , B_3) are in a fair state of preservation. They now form useful cellars under a small garden house; their floor is about 6 feet below the modern garden path. The interior was fine-plastered over a reticulated face and painted a rich yellow with the usual panelling of red lines. The chambers are nearly square, 12 ft. 8 in. deep by 12 feet wide, and are shown with the other structures on the hill above them, in plan and in section in figs. 47 and 48. The black represents Roman work; the spotted, modern building.

Further north are four more barrel-vaulted chambers (C_3 - F_3), of which the original floor is buried 3 feet deep under a modern floor: the eastern wall has fallen, leaving them gaping open. The vaults, still fairly complete, show impressions of the boards that were used as centering to hold up the concrete until it had set. The top of each vault rises about 4 ft. 6 in. above the spring of the arch. There is a small niche in C_3 .

For quite 40 yards beyond the garden house are similar constructions all belonging to the same tier; but the last two chambers have a slightly different orientation from the rest. The walls of one of them are coloured red, and are provided with two niches, one at the back, shallow and

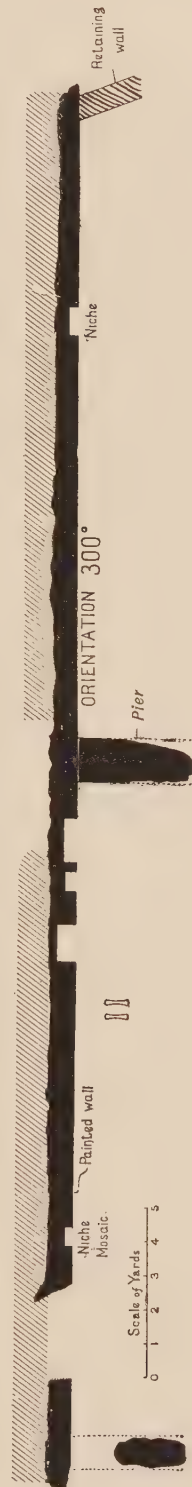


FIG 46. GROUND-PLAN OF WALLS AT THE LEVEL OF THE MOSAIC NICHE.

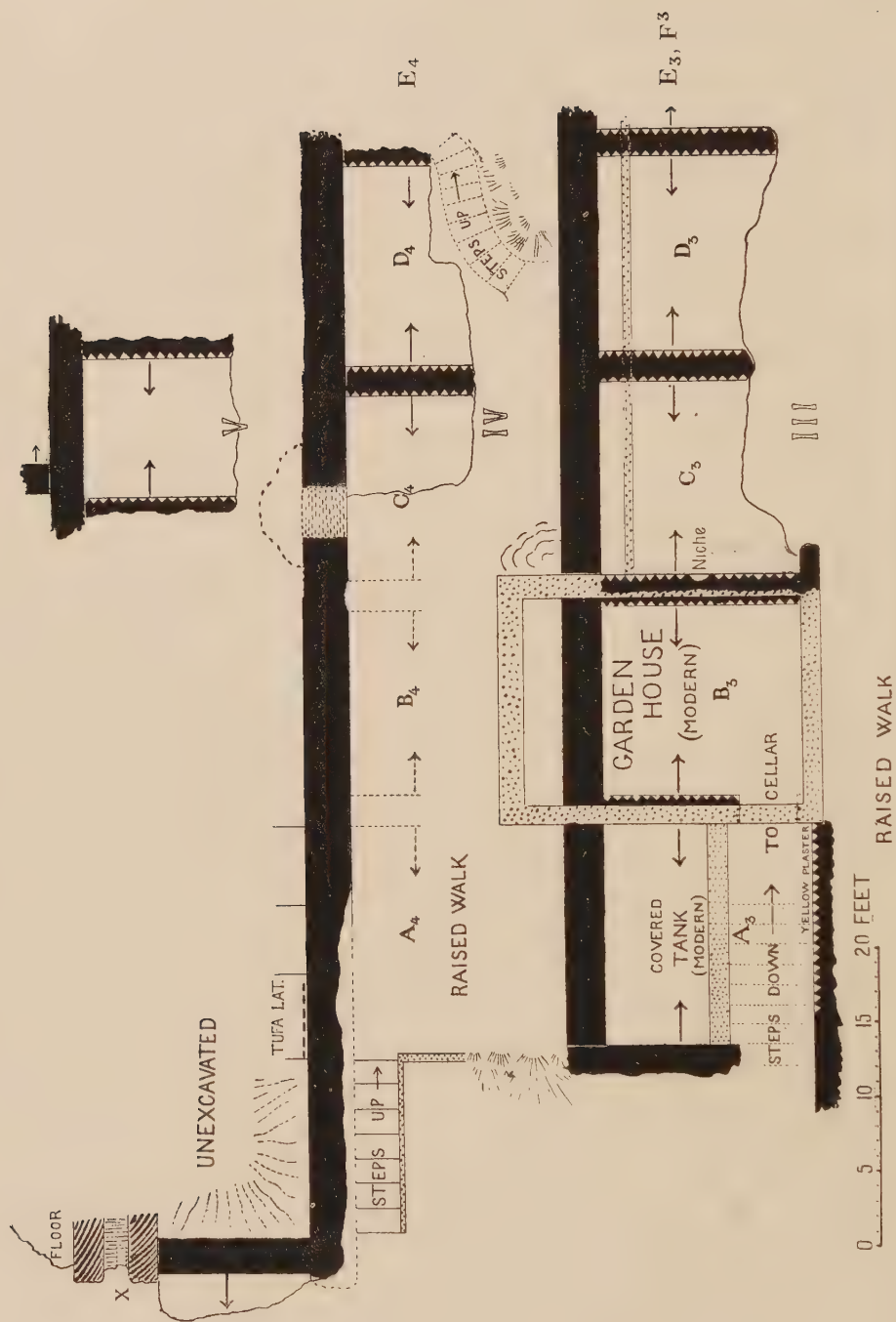


FIG. 47. PLAN OF THE WALLS ON FLOORS III, IV, AND V.

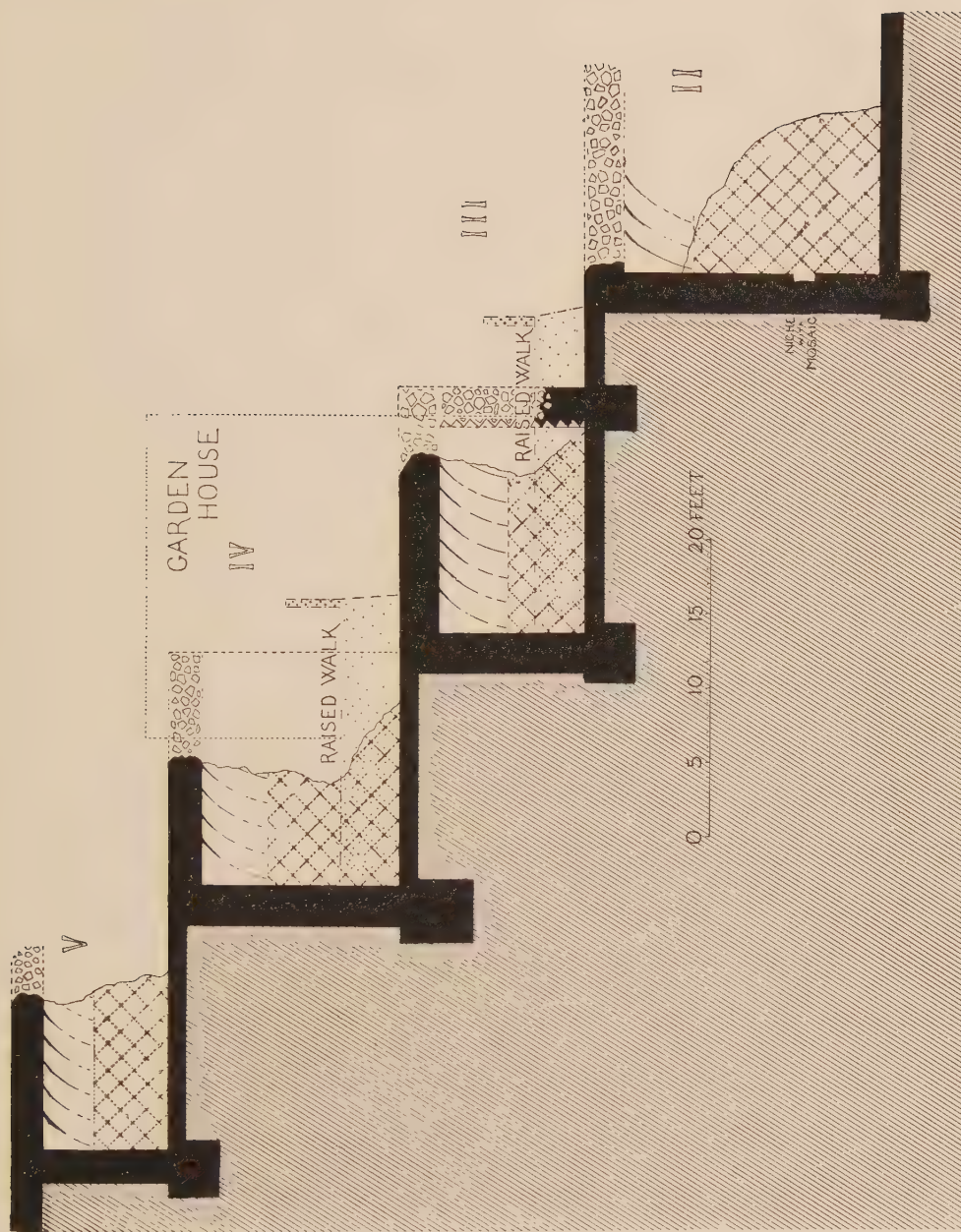


FIG. 48. SECTION THROUGH THE SUBSTRUCTIONS AND TERRACES OF FLOORS II-V.

arched, the other in the north wall, rectangular and with grooves for two shelves.

Of the building upon terrace **IV** only half vaults of two of the chambers, D_4 and E_4 , remain, but traces of others, B_4 and C_4 , are not hard to recognize. A flight of modern narrow steps leads up to the substructions of tier **V**, and another up to what may be considered as those of a sixth tier, which is on a level with a well-appointed hot bath, at about 50 feet above the present sea-level, and which would therefore have been some 70 feet above the Roman sea-level.

Here and there are large blocks of concrete, apparently the foundations of higher parts of the building, and on terrace **V** we noted a bit of wall faced with tufa lateritium at a height of 10 feet above terrace **IV**.

Above all these substructions were the Upper Baths.

The Room with the Glass Mosaic.

All that is left of the mural decoration of this chamber shows it to have been of a simple type, at any rate so far as the dado was concerned. White or cream-coloured walls were divided into panels by black bands flanked by narrower lines of Pompeian red. A second inner contour, in red, surrounded the lower panels.

In the western wall of the chamber is the small niche lined and framed with the mosaic. The niche had apparently been hollowed out in the wall subsequent to the plastering, and indeed to the linear frescoed decoration, for it cuts into the red lines which frame the second panel.

The opening of the niche measures 17 inches high by 20 inches broad, and it is about 8 inches deep. The sides as well as the back are encrusted with the mosaic.

The Glass Mosaic.

A chromolithograph of the mosaic prepared from an enlarged photograph forms the frontispiece to this book.

On the back, against a background of bright cobalt blue representing the sky, are three plants, a reed growing between two green plants with simple ovate or oval leaves, over which is hovering a white dove with tail spread and wings outstretched, head and feathers being

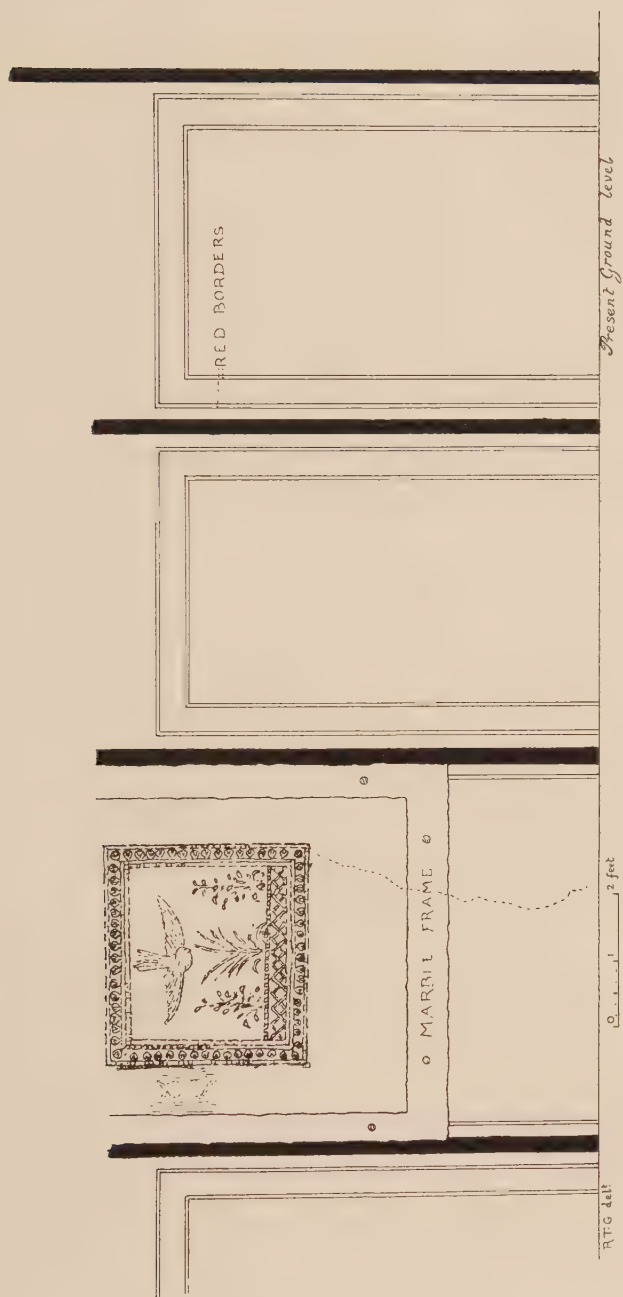


FIG. 49. MURAL FRESCOES NEAR THE NICHE WITH THE MOSAIC.

cleverly indicated by a linear arrangement of tesserae. The leaves of the plants are treated in a very realistic manner, mosaic cubes of two shades of green being employed in the shading, and between them bits of deep blue-black glass have been skilfully introduced to show up the leaves in greater relief. Below are one or two flowers, simply sketched—a central blue tessera surrounded by four yellows.

The bottom of the little picture is bordered by a trellis, represented by yellow lines crossing X-wise on a blue ground. Round the whole run lines of white and blue tesserae and then one of cockle-shells.

The nature of the narrow mosaic decoration of the sides of the niche is apparent from a piece, measuring 13 inches by 5 inches, still *in situ* on the left. About ten small crosses placed vertically and in alternate colours are inlaid in a background of black glass, now iridescent. Each cross is formed of five tesserae, the alternate crosses being formed by tesserae surrounding one blue by four yellows, and four whites surrounding one yellow. The most interesting feature of this side panel is, however, its inlaid rectangular border of spirally twisted glass, black with a thread of yellow, pieces of which were found *in situ*. A cockle-shell border surrounds this, and round the inner angles of the niche the rope-like glass ornament is repeated. The shelf of the niche appears to have been coated with plain hard plaster.

The niche was framed in a mosaic border inlaid in the plaster of the wall and surrounded by a moulded marble frame in relief. The pattern of the mosaic border was formed by interlacing bands of yellow mosaics on a background of cobalt blue, and flanked on either side by three parallel lines, each a tessera wide, in order from within outwards, yellow, green, blue.

The outer marble frame was fixed in the usual way by iron holdfasts, rusted traces of some of which still remain. Its size over all may be estimated from a scar left on the plaster, at about 2 ft. 5 in. wide and 3 feet in height.

In an attempt to ascertain the age of this little glass picture, at least three factors may profitably be taken into consideration.

First, the glass mosaics. We find essentially similar ones upon the handsome encrusted columns from a house in the Street of Tombs at Pompeii, now in the Naples Museum, and in several fountain-niches of the same period in Houses, nos. 22 and 23 in Regio VI, Ins. viii.

Secondly, the cockle-shells, which are employed in exactly the same manner and affixed by the same reddish-brown cement as in the ornamentation of the above-mentioned fountain-niche.

Thirdly, the twisted glass rods, which, so far as we have been able to ascertain, have not hitherto been described as forming part of the decoration of a mural mosaic, although similar detached sticks of twisted glass have not unfrequently been found on other sites; and there is a fragment of plaster measuring 4 inches by 2 inches in the Capitoline Museum with three glass rods embedded. My friend Sir Hercules Read has drawn my attention to similar spiral rods in the national collection in the British Museum, which have one end thickened and flattened, very like the implements that were formerly in general use in this country for crushing sugar in a glass of warm toddy.

In style as well as in the materials with which it is decorated, this mosaic reminds us of those of the charming fountain-niches of which some half-dozen have been found in Pompeii.

In several of them we see the cockle-shell border and birds flying over plants; cf. Presuhn's illustration of a mosaic found in Reg. VI, Ins. xiv, no. 43. And the same details may be seen in a fountain-niche found at Baiae, and now deposited in the South Kensington Museum.

In the absence of any evidence to the contrary, it is not unreasonable to conclude that the period to which the construction of this glass mosaic is to be referred, cannot have been very long before or long after A.D. 79. We see no good reason for believing the niche to have been intentionally decorated with the Christian emblem of the Dove, although that idea was the one which first occurred to us. But in spite of the great resemblance of this little mosaic to the fountain pictures, it is not impossible but that it may have formed the background of a small lararium or shrine sacred to a deity, in which case a religious significance may be attributed to it. It will be remembered that the dove was very closely connected with the founding of the first Greek colony upon this site, and that that fact was never forgotten in ancient Naples.

The ships of the original Chalcidian colony had been piloted from Euboea to the Campanian shore by a dove, and in pious memory of that event, the cult image of Apollo in the Temple of Apollo at Naples is said to have had a 'columba' perched upon his left shoulder.

'Ipse Dionaea monstravit Apollo columba.' Stat. *Silv.* iii. 5. 80.

'Huius classis cursum esse directum alii columbae antecedentis volatu ferunt.' Velleius, i. 4.

'Tu ductor populi longe migrantis Apollo

Cuius adhuc volucrem laeva cervice sedentem

Respiciens blande felix Eumelis adorat.' Stat. *Silv.* iv. 8. 47-9.

Roadway



FIG. 50. THE LOWER BATHS ON THE WEST SIDE OF THE GAIOLA BEACH.

THE GAIOLA BEACH AND THE LOWER BATHS

THE rough mule-track that leads down the Gaiola valley follows the Roman Valley Road that went down to the ancient harbour from the tunnel, but the modern track lies several feet above the level of the old road. As it nears the sea the path descends in much-worn steps cut in the rock, and after passing outside a modern retaining wall traverses some massive ruins that rise from the little beach; rough, uncomfortable steps worn in these ruins lead down to the sand.

The ruins are for the most part those of baths which stood on the right-hand or western side of the old road; and the old walls pierced by the tunnel-like entrance to Mr. Foley's house clearly belonged to the same structure.

In any intelligent examination of the site, it must always be remembered that at the time when the buildings were erected, the land stood some 20 feet higher above the sea than it does now, and that floors over which the sea now washes, had a whole ground-floor suite of apartments under them, but these submerged chambers are now filled with sand and water and have not been seen by any living man. If, then, we describe the various parts of the buildings on the Gaiola Beach according to the storey to which they belonged, the uppermost now standing, although now not very high above the sea, formed the third storey in Roman times.

Of the third storey we have a mass of building near the entrance to the Proprietà Foley. Just within a modern gate is a narrow chamber, fig. 51, *A*, floored with opus signinum, with reticulate walls plastered and painted with yellow stripes and pattern. An oblong niche *a*, $4\frac{1}{2}$ feet in length and raised 3 feet from the floor, was built in the west wall, but it has been partly filled up by a more recent wall of reticulated work. The present pathway, 18 inches lower, cuts through the signinum floor, a continuation of which, *b*, fig. 51, may be seen outside the modern boundary wall. This pavement is about 22 feet above sea-level.

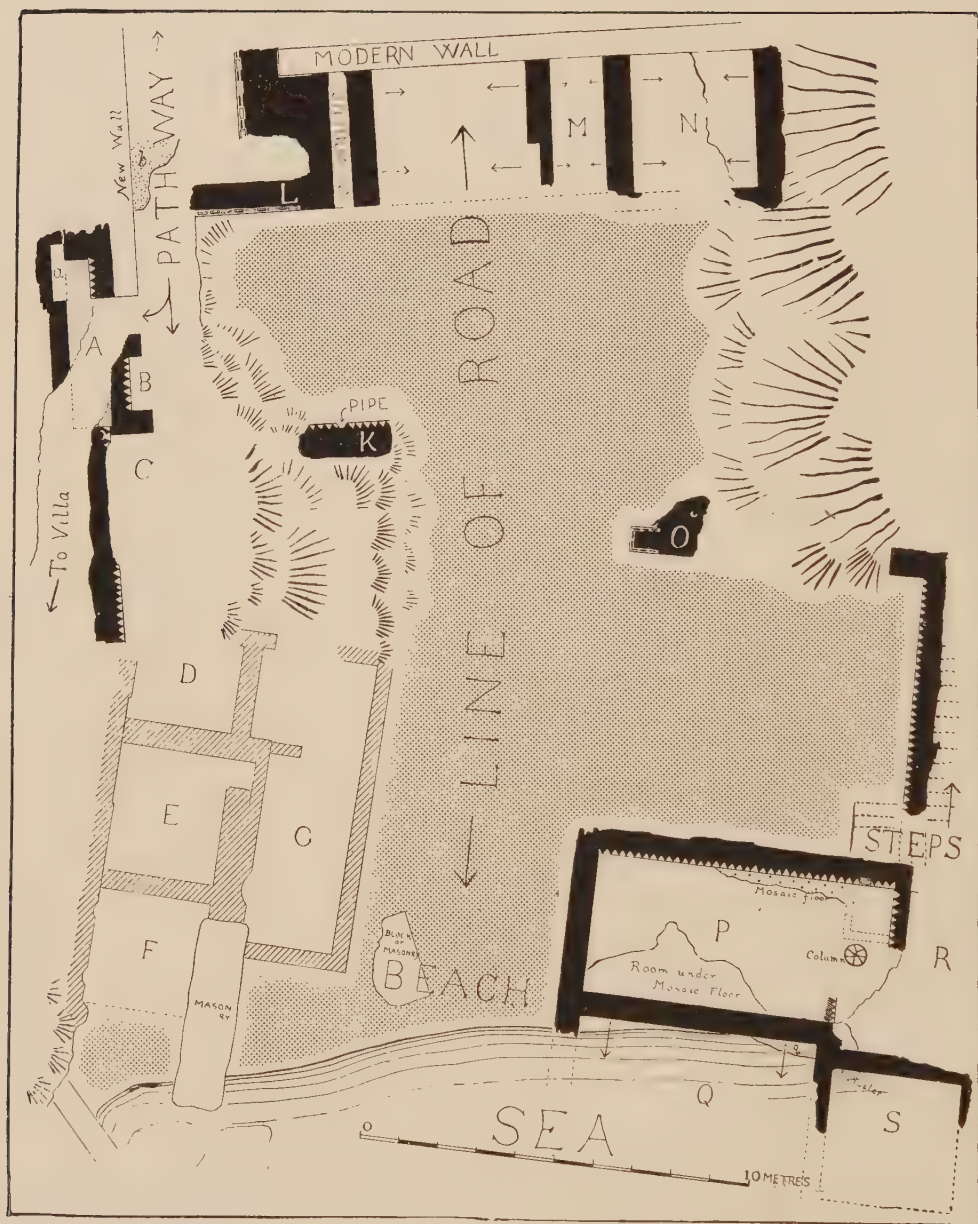


FIG. 51. PLAN OF WALLS ON THE GAIOLA BEACH.
 Heated rooms D-G are shown on a larger scale in fig. 52.

To the south of the modern gateway is more wall-surface, 6 feet high, reticulated, plastered, coloured yellow and decorated with a red border $1\frac{1}{2}$ inches wide; and next it, is a similar blue-painted wall. These two walls were the western ends of two small chambers, a yellow room B and a blue room C, which extended eastward above, and at the back of the hot rooms on the original second storey, and which, as may be seen on the plan, have a different orientation.

The second storey has been overlaid by a recent floor at a height of about 10 feet above the present sea-level, but its structure is partly revealed at the lower end of the small path which leads across the ruins down to the beach. Here certain small apartments are provided with so complete an investment of hollow floors and walls, that not only is the purpose of the building as a thermal establishment clearly indicated, but also that here must have been the warmest chambers of the baths. Unfortunately the site is traversed by a public footpath, which we could not remove without getting into trouble. Nevertheless, by scraping away here and there we were able to make out several details clearly. One chamber, E, fig. 52, measuring 9 feet by $10\frac{1}{2}$ feet, was fitted with hollow walls and with a suspensura floor, carried partly on oblong stacks of bricks, e' , e'' , 3 feet in height. The construction of the west wall is shown in elevation at e . Twenty courses of brick, rising to the same height as the two piers e' , e'' , form a fire-proof facing to the hot-air chamber below the suspensura; thereon are laid nine courses of tufa lateritium (2 ft. 8 in.), in which are several iron holdfasts; then four or five courses of brick lateritium, above which, for a height of 3-4 yards, the wall is faced with reticulate work banded with courses of brick, in which more iron holdfasts afford an indication of an inner lining either of flue tiles or of marble veneer. The suspensura floor of this hot chamber is 5 feet, and the under floor only 2 feet, above the present sea-level. On the north side was a second, apparently similar though smaller, chamber D, also provided with a complete lining of rectangular flue tiles, in section 6 inches by 4 inches, under plaster. There are flue apertures near the south-east corner of E (marked 'passage' in the plan) and through the east wall of D.

To the south was a lower vaulted chamber F, with two plastered niches in the west wall, but the south wall has fallen, so that the chamber is open to the wash of the sea in rough weather. The eastern side has been hidden under the concrete mass of a new breakwater.

To the east was a long apartment G, 8 feet wide, of which the

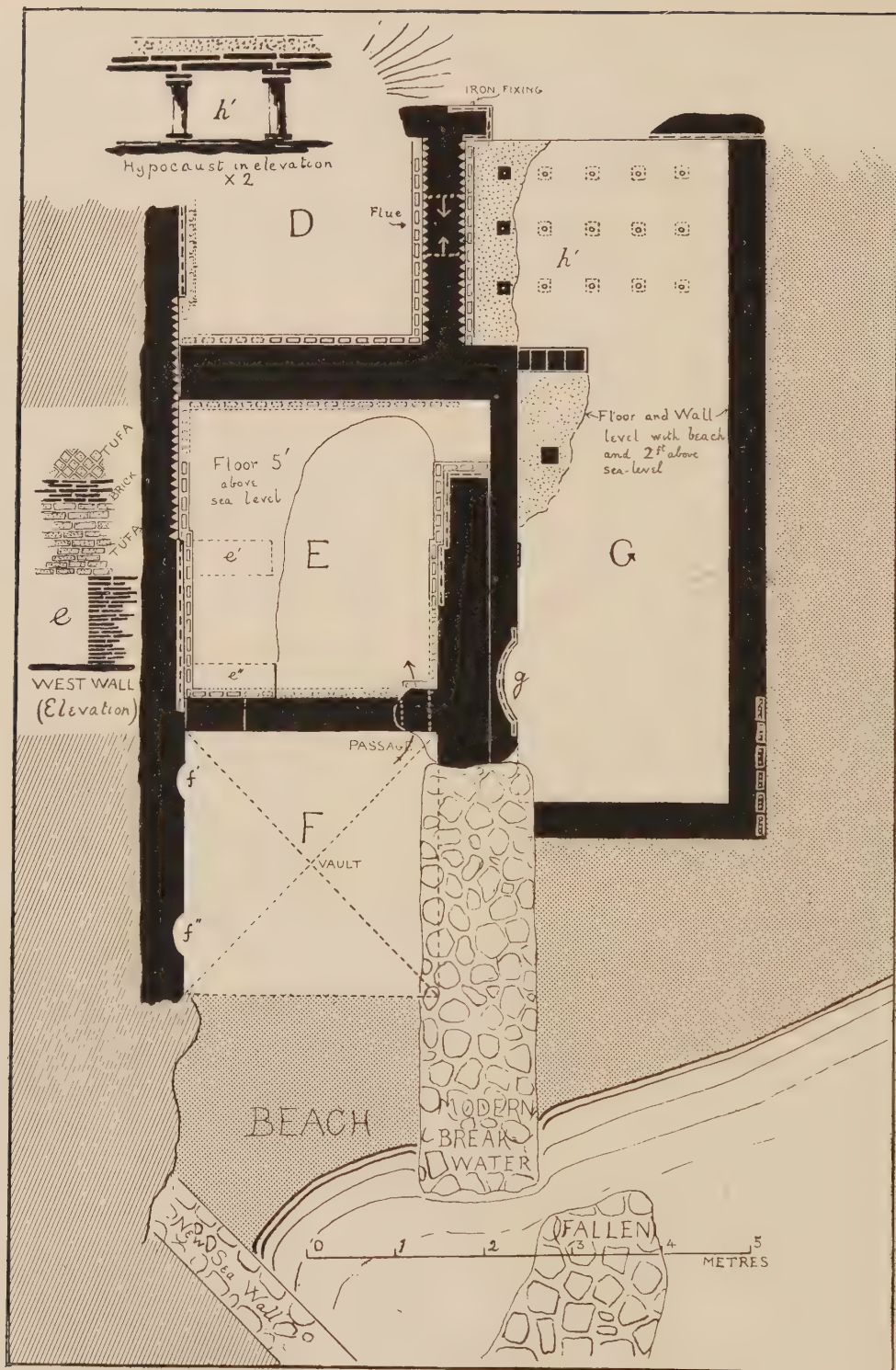


FIG. 52. PLAN OF THE LOWER BATHS.

east wall is now level with and partly hidden under the sand of the beach. The vestiges of a *suspensura* and of hollow walls still remain at the north-west end, but as the floor is 3 feet below the floor of the other rooms E and F, and is only 2 feet above sea-level it is surprising that any of it should have survived destruction. The *suspensura* was not very thick. The *pilae* were formed of long tubular tiles, like those of the upper baths, but with squarer ends, measuring 6 inches across. They were further heightened by one



FIG. 53. SUSPENSURA IN THE LOWER BATHS.

small square tile laid upon each, and on these were laid two courses of large tiles, each about $1\frac{3}{4}$ inches thick by 18 inches square, which bridged the intervals between pile and pile; the three courses of tiles occupying 6 inches. Upon this 4 inches of *opus signinum* finished the hot floor, as shown in elevation in the inset at the top of fig. 52 and at *h* in figs. 50 and 53. The whole construction was very similar to that of the hypocaust and hollow walls of the Baths in the *Thermae* of Caracalla as described by Middleton, whose drawing, by the permission of Mr. John Murray, we reproduce on p. 97.

In the wider northern part of room G the wall is partly reticulate, partly brick, the higher parts standing being overhung with

a luxuriant growth of *Mesembryanthemum*, but the eastern wall shows tufa lateritium work in places : in the west wall is a shallow rounded niche, *g*, 2 ft. 8 in. in width. A doorway led northwards to an apartment with iron fixings plugged with marble chips in the walls, from which we may infer a former lining of marble slabs. Another wall *k*, fig. 51, faced with reticulate tufa, lies at a distance of 21 feet to the north. It is traversed by a horizontal band of six courses of brick lateritium, and is channelled with a vertical groove 3 feet in length, evidently for a water-pipe. This part of the building is obviously of the same period as the back wall of chambers *d* and *e*.

At the head of the beach a modern retaining wall, 12 feet high, has been built across some ancient and more massive constructions of concrete, *l*, *m*, *n*. A fine thicket of canes flourishes above it. In Roman times, we imagine, there was no cross wall, but the way would have been open, giving space for a 12-foot roadway between the piers. The purpose of the piers was, we believe, to support a large arch spanning the roadway and a narrower arch beside it over the foot-way *m*, the whole forming an entrance, perhaps with sculptured reliefs and inscriptions worthy of the owner of the Villa. No better place for such a monumental gateway could be found than this, near the head of the harbour and at the lower end of the roadway. On the western side of *l* is a wall faced with alternating courses of tufa and brick. On the east side a vaulted chamber *n* measures 11 feet by 9 ft. 8 in.

Beyond this again, on the beach at the foot of a stairway leading up to the squalid quarters of the Casa Marotta, and separated from the lower baths by a space of 6 yards, another building, fig. 51, *p*, *q*, *r*, *s*, the purpose of which is not obvious. Firstly there is a reticulated wall under the steps, which appears to have been part of the same structure as a solid brick pier, *o*, which is just showing above the beach. Owing to the subsidence of the land, the top of the concrete floor of *p*, the principal room now visible, is barely 2 feet above the sea, and the strong walls have been worn down level with the sand in which they are buried. The pavement was of white marble mosaic with a few black tesserae spotted about at regular intervals. Near the eastern end of the room is the base of a column, 2 feet in diameter, built of fragments of brick and plastered. The north wall is reticulated, but a vestige of tufa lateritium may be seen near the angle inside a small modern enclosure indicated by dotted lines in the plan.

There is good reason to believe that another chamber of similar dimensions exists beneath this floor, but that owing to subsidence it is now below sea-level and filled with sand. The adjacent apartment,

Q, is also flooded, so that the sea is now actually washing against the plaster at the top of the back wall and against what remains of the springing of the vaulted ceiling, *q*, in the north-east corner of the room. Few instances of the effects of land-movements are calculated to make a more vivid impression than the sunken ceiling of this room, engulfed like a wrecked ship in the Gaiola beach. Vestiges of plaster remain on the walls of the adjoining rooms, R and S. The latter, measuring 13 feet by 11 feet, is entirely under water.

The excavation of these buried submarine chambers would be a matter of great interest. Who can tell what works of art might not be discovered? A final answer might also be found to a question which has often been asked. Was the subsidence a sudden one, or was it gradual enough for the buildings to be dismantled by their owners? But for such an excavation it would be necessary to build a coffer-dam and to pump out sand and water. For the present any treasures these submerged rooms may contain are nearly as safe as ingots in a sunken treasure-ship.

On the beach rolled fragments of granite, of Carystian and Porta Santa marbles, together with small bits of red porphyry and green serpentine, bear witness to the departed luxury of the baths and to the wealth of the builders.

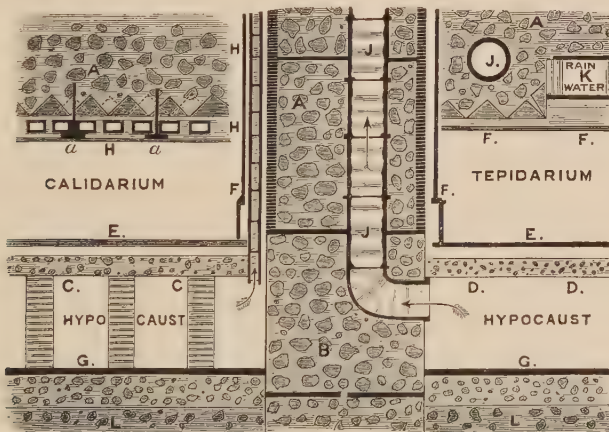


FIG. 54. METHOD OF HEATING THE BATHS IN THE THERMAE OF CARACALLA.
After Middleton from Smith's *Dict. of Antiquities*.

- | | |
|--|---|
| AA. Concrete wall faced with brick. | HH. Horizontal and vertical sections of the |
| B. Lower part of wall with no brick facing. | flue tiles, which line the walls of the |
| CC. <i>Suspensura</i> , or upper floor of hypocaust, | Caldarium. |
| supported by pillars. | aa. Iron-holdfasts. |
| DD. Another floor, with support only at the | JJ. Socket-jointed flue-pipe of Tepidarium. |
| edges. | K. Rain-water pipe. |
| EE. Marble flooring. | LL. Vaults of crypt, made of pumice-stone |
| FF. Marble plinth and wall lining. | concrete. |
| GG. Under-floor of hypocaust, paved with | |
| large tiles. | |



FIG. 55. THE UPPER BATHS. LOWER STOREY.



FIG. 56. PANORAMIC VIEW OF THE UPPER BATHS, FROM THE WEST.

THE UPPER BATHS OR BATHS OF HADRIAN

IN Neapolis, there were hot baths near the theatre, *Impatiens secreti a balneis in theatrum transiit* (Suetonius, *Nero*, 20). At Pausilypon it would have been scarce four minutes' walk from the one to the other, and the distance to the principal dwelling-house which we have named the House of Pollio was even less. Plans of the baths are given in figs. 57 and 60, but the buildings are not by any means all of the same age. Both the furnaces and the caldarium present features of exceptional interest. Neither formed part of the original building, nor, for the matter of that, of the later one. They are survivals of a transition stage of unknown duration which have been built over during structural alterations in the baths, thereby being preserved to us.

Our experience of the instability even of modern systems of heating, of hot-water, warming, and ventilating appliances helps us to realize that improvements were constantly being demanded by wealthy patrons of the architects and plumbers of Roman baths. At Silchester in our own country we have an excellent instance of this. Mr. St. John Hope has been able to trace no less than six distinct periods in the history of the baths, each marked by some alteration or improvement: and there was hardly a bathing establishment of any repute between Calleva and Pompeii which does not show signs of repeated readjustments to the tastes and new inventions of successive generations.

In the present case we were fortunate enough to find irrefutable evidence that alterations in the Upper Baths of Pausilypon were made at the time of Hadrian and probably by his orders.

The rooms in this block of building were disposed in at least three storeys, but successive owners of the property have thrown down such large portions of them that now it is difficult to arrive at a clear comprehension of the plan as a whole. The remnants which are still preserved to us with any approach to completeness are of excep-

tional interest, and the circular hot bath basin especially so. The rooms of the middle storey were used as bath-rooms: the purposes to which the rooms of the lower and upper storeys were put are unknown. A general view of the ruins is shown in figs. 55 and 56.

No trace of any stairway has been found, so that it may have fallen with the cliff-side, or it may be that there was no near way of getting from the rooms on the lower floor to the baths above. We will describe the lower rooms first.

The Rooms on the Lower Storey. (Storey V.)

Near the end of a modern wall built to shelter a garden behind Mr. Foley's house (= Casa Bechi, fig. 56) from the blighting effects of the salt-laden Scirocco, and close to where it abuts against the older walls under the hill-side, we find a remnant of building, shown in ground-plan in fig. 57, which is interesting enough to make one wish that a larger portion of it had been preserved.

Here in the corner of room A are the remains of a small rectangular tank or basin, *t*, formed in white cement, measuring $27\frac{1}{2}$ inches by $22\frac{1}{2}$ inches, and $21\frac{1}{2}$ inches deep, and two holes for the supply and overflow pipes are to be seen in the walls. When excavated, the overflow, in the middle of the longer side of the basin, was found to be choked by two pieces of pumice-stone, which had evidently been in use, for they were rubbed flat on one side, and we wondered whether they had effectually blocked the drain, thereby causing a flood, and whether the careless domestic, from whose hands they had slipped, had entirely disclaimed all blame for the stoppage. The pavement of the room upon which this basin was built, was of opus signinum and rested upon the untouched volcanic soil of the hill.

Below the plastered basin, but quite near it, there existed until recently a rather remarkable structure, *s*, removed by Mr. Foley to make way for a new pathway below. It was a vertical tubular shaft, lined internally with smooth white cement and extending downwards for some 15 feet below the signinum floor. Near the bottom, the shaft became square in section, with an opening towards the east. Its relations to the channel *c* shows it to have served as a water-conduit or drain.

Near the basin was unearthed a piece of lead pipe which was a find of the greatest consequence, for it has enabled us to give a name and date to this portion of the Baths. It bore the name of Hadrian and will

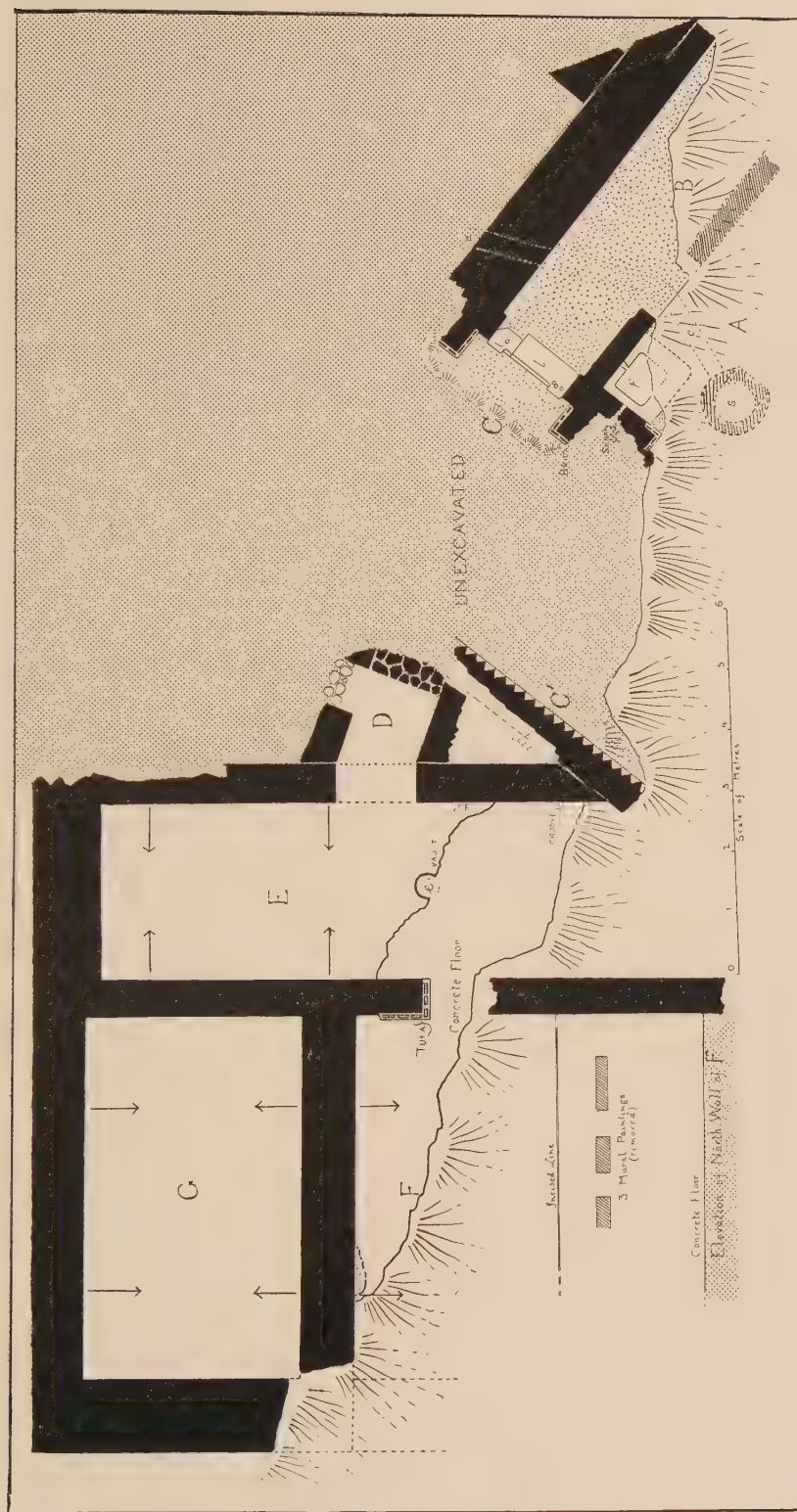


FIG. 57. PLAN OF UPPER BATHS, Lower Storey.

be described in detail in the section dealing with the Water Supply, p. 129.

Close to the little basin a doorway opens into a passage, *B*, also floored with opus signinum, beneath which ran obliquely a water-channel, *cc*, formerly opening into the vertical shaft already described. The passage, 6 feet in width, was plastered, the walls showing a pattern of red lines on a white ground. Fragments of other plaster with yellow and brown floral decoration (p. 256) and bricks with pentagon stamps (p. 216) were found here. Turning to the left we found a doorway with a threshold of two blocks of lava, *ll*, rebated and recessed in the middle for the doors and showing three small round cavities at the ends, the pivot cavities of successive doors hung in different positions. The inner corners of the walls of the room *c* are strengthened with brick lateritium. This room has not yet been excavated, but a reticulated wall, *c'*, some 12 feet distant and about 8 feet high, probably indicates its western limit. The floor is of opus signinum.

Among the débris were found pieces of rectangular flue-tile which were more than 8 inches long when whole, and measuring $5\frac{1}{2}$ inches across the wider side. The sides are thin, being scant $\frac{3}{16}$ in. thick; they are well baked and ring when struck. From these we may infer the former existence, on this storey or on the storey above, of a room heated by hollow walls constructed of similar tiles; while numerous fragments of veneer of cipolline and Porta Santa marbles may indicate the nature of the internal decorations.

At the back of these constructions at *B* and above the garden behind the house, the walls shown in fig. 58 project from the hill-side. The rectangular chamber now partly occupied by a semicircular garden-house, was once covered by a floor crossed by a small channel of rectangular cross-section. A section across the adjacent walls is shown as an inset at the top of the figure.

Further west a range of building with a different orientation is crossed obliquely by the reticulate wall *c'* already mentioned. A large vault *E*, 10 feet wide by 12 feet to the spring of the vault, or 16 feet to the crown of the vault, extends for near 30 feet in a north and south direction. The vault is perforated by a round hole *e*, plastered and 16 inches in diameter. Near the middle of the east side a doorway, 6 feet high, 4 ft. 3 in. wide, spanned by a horizontal lintel, leads into a small oblique passage-chamber *D*, now blocked, but which appears formerly to have led further in two directions; it probably communicated with room *c* and so with the passage

behind the white cement basin already described, and it may have led north to a stairway to the floor above. The ceiling of *D* is flat and about 8 feet above the floor. The interior of the large vault was plastered and marked with a dado line 5 ft. 3 in. from the floor. Near the south-east corner at 28 inches above the floor a groove in the plaster denotes a former shelf or long bracket.

On the west two other chambers, 16 feet by 11 feet, are situated side by side. The inner one, *G*, is still perfect, but the greater part of the other, *F*, to the south has fallen away; a small fragment of wall shows it to have been ceiled with a barrel-shaped vault with

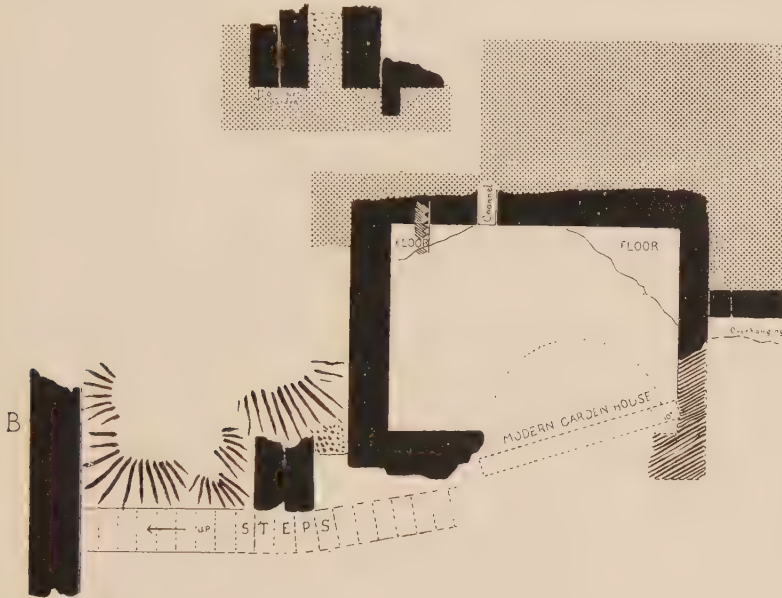


FIG. 58. PLAN OF WALLS, TO THE EAST OF THE UPPER BATHS.

the springing from north to south. The floor rests directly on the undisturbed pozzolana. The decoration (see inset to fig. 57) consisted of a high red dado up to 7 ft. 4 in. above the floor with long oblong pictures, at intervals which have been carefully excised by the hand of the spoiler. The upper part of the wall was divided from the dado by an incised line and was coloured cream.

The fact that the whole of this building is of tufa and that the pier between the two vaulted chambers is constructed of lateritium tufa is an indication that the structure is to be referred to the earlier architectural period of the Villa.

The orientation of room *E* is due north and south; that of the

later brick and reticulated building to the east being turned about 45° to the east. If we were called on to advance any theory with regard to their respective ages we should say that c might be Hadrianic but that e, f, g, are much older.

The inner vaulted chamber g was also decorated with a reddish dado, the walls being white above. The crown of the vault was also about 16 feet above the floor, but has now flattened to a dangerous extent, and is threatening to fall. There may be a door into this chamber from the cross chamber e, but as the removal of the débris with which both are encumbered could not be undertaken without danger, we did not verify this point.

The adjoining rooms on this storey, v, further west were demolished during the quarrying operations of the Marchese del Tufo, by which the hill-side, which had been level with the Vineyard Site, was reduced to the condition shown in figs. 55 and 56.

Upon the floor above are the most interesting, perhaps because best preserved, parts of the baths.



FIG. 59. THE CORRIDOR WITH THE MARBLE PAVEMENT, J.

*THE MIDDLE OR BATH STOREY (No. VI.)**The Corridor with the Marble Pavement.*

Behind the line of the rooms E, F, G of the lower storey and one storey higher, is a long corridor, J, with a marble floor. It was formerly covered by a barrel-vault which carried a floor of opus signinum belonging to the third or upper storey (VII), fragments of which may be seen on the fallen blocks of concrete, *jj*. Owing, however, to the removal of pozzolana from beneath the foundations, the south wall, excepting near the two ends, has entirely collapsed, and the floor of mixed coloured marbles extends for $19\frac{1}{2}$ yards along the face of the cliff like a terrace, 7 ft. 2 in. wide, without a parapet.

One entrance to the corridor was from the east, but other doorways no doubt opened from it into rooms to the south, which have fallen with the cliff beneath them. Another doorway, *d*, 4 ft. 10 in. wide, opened through the north wall between jambs of tufa lateritium, laid in $3\frac{2}{3}$ -inch courses; but this had already been blocked up in Roman times, probably when the marble stairway, *s*, to the caldarium was cut through a wall with a previously continuous facing of opus reticulatum.

The west end is terminated obliquely by a wall of masonry, *a*, of a type unusual in the Pausilypon Region, namely, of large blocks of tufa, in 8-inch courses, and corresponding in orientation with an older vaulted building *v*, whose walls protrude 6 feet below the marble pavement.

Two features in this corridor are of especial interest. The floor has been constructed to throw off water easily, indeed it slopes with so steep a gradient that the east end is 2 ft. 10 in. lower than the west end; and secondly, it had been crossed by two water-channels or drains fig. 59, x^1 , x^2 , each 16 inches wide, and plastered, the bottom of each channel being 2 feet below the top of the pavement. But the interior of the channels had already been filled with rubble masonry before the laying of the pavement, they must therefore have belonged to some earlier construction. A connecting channel runs close under the north wall of the corridor; two manholes, *bb'*, quite close together, which open into it, are closed by large bricks; one of them, *b'*, cannot have been used since the building of the stairway, for its cover is tightly fixed under the stone and mortar of the lower step. This manhole was probably the older of the

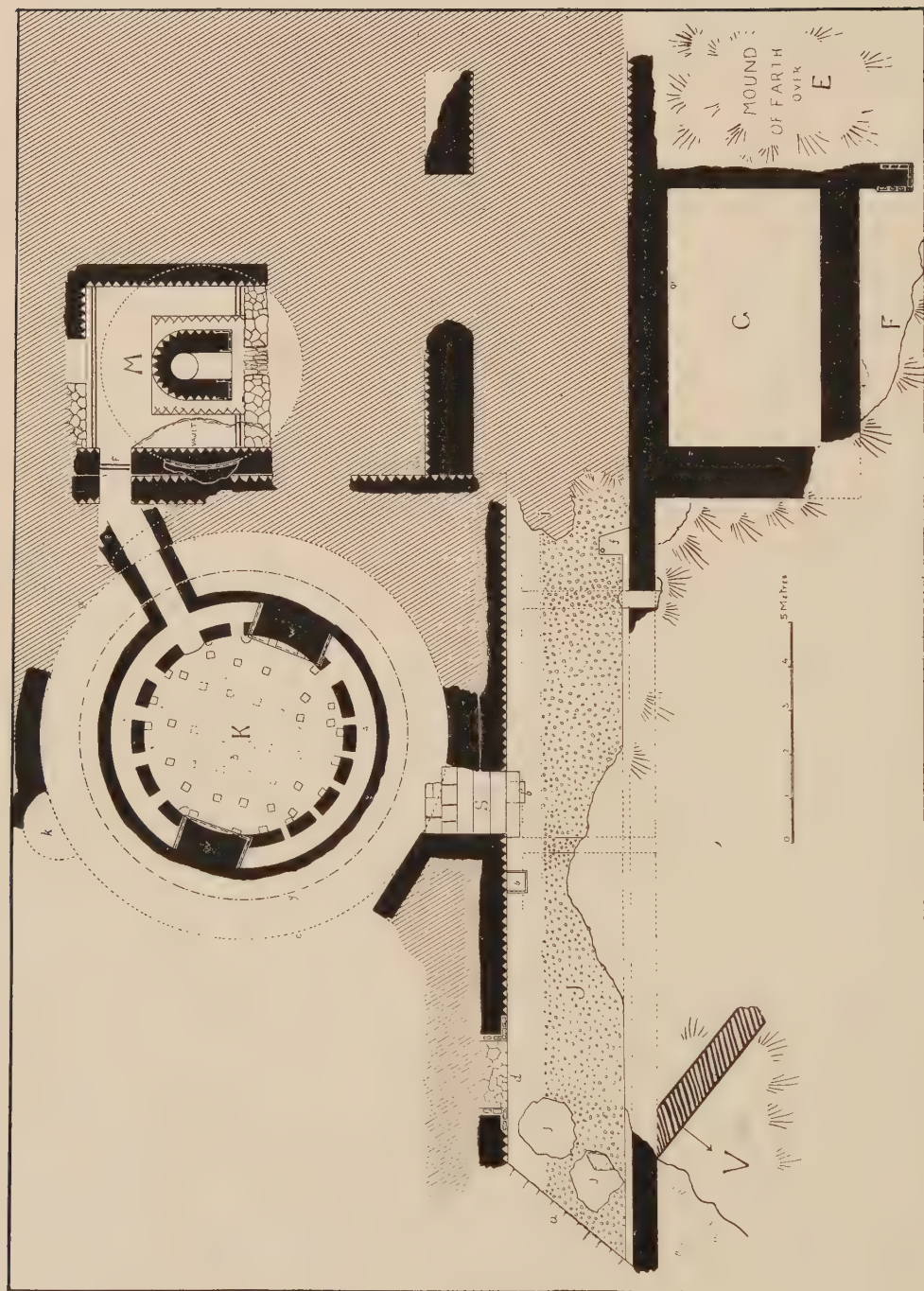


FIG. 60. PLAN OF UPPER BATHS. Middle Storey.

two, the building of the stairway necessitating the construction of the second opening, *b*, within 5 feet of the first.

Within the channel, which had apparently escaped the notice of previous excavators we found a small bronze hinge (p. 291), fragments of glass and pottery (pp. 283, 289), and pieces of fine white painted plaster (No. 7, p. 256), indicating that the earlier colour scheme of this room was green and yellow, and finally a base denarius of Claudius Gothicus, showing that the channel had remained in use until after A. D. 268.

The floor over the long channel is covered with plain cement, which now appears as a border, 32 inches wide, to the polished floor of marble concrete. It is possible that this plain border was covered by an edging of flat marble slabs.

The walls still show four coats of plaster with traces of colour here and there, the decoration being rather that of a frigidarium than that usual in the warmer portions of baths. The dado was cream, with a black and blue trellis, in which was intertwined blue, grey, and slate-coloured foliage. Higher up were floral wreaths, blue festoons with red flowers; and a brown and yellow band bearing clustered flowers, in order blue, yellow, black, and blue (fig. 157, *c*). Another fragment of plaster was painted with red and yellow flowers among green leaves.

The earlier style of decoration, as indicated by the fragments found in the flue, seems to have been much lighter in effect. The plaster was of whiter and finer quality, and was laid in a thinner coat. In the decoration yellow flowers among olive-green foliage, painted in a somewhat conventional manner, predominated (fig. 157, *g*).

Near the eastern end of the corridor there is a small trapezoidal mark *f* on the floor, measuring 28 by 16 inches, with a small circular pit in one angle. It is evidently the impression of an object which formed a permanent part of the furniture of the corridor, since the marble pavement is not continued over it. The pit is not unlike the hole for a door hinge in a threshold stone.

Eastward the marble-paved corridor opened into a wider gallery, 11½ feet in width, which ran east and west at the back of the high-vaulted rooms *G* and *E* of the lower storey *V*. Immediately behind this gallery are some massive blocks of masonry, more than a yard thick, and faced with reticulate tufa, and 5 yards beyond is the furnace-room *M*.

The Stairway. s.

A flight of six marble steps led up from the corridor to the caldarium κ. Five of the steps, 4 ft. 7 in. in width, have been somewhat rudely hewn out of the thickness of the wall, showing the whole stairway to be a later addition. The lowest step projects into the corridor, covering the opening *b'* of the water-channel already

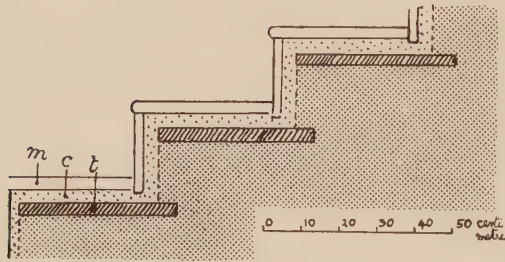


FIG. 61. SECTIONAL ELEVATION OF STEPS.

mentioned. All the steps were covered with marble slabs, bedded on plaster, spread $1\frac{1}{2}$ inch thick, on a foundation of large bricks. The slabs have been stripped long since, but their positions are indicated by marks on the cement and by fragments of marble, bedded here and there in the cement by the masons engaged in levelling the slabs. The treads of the steps were 15 inches wide; the risers being 8 inches high, and made of marble about 1 inch thick. The method of construction is shown in fig. 61, in which *m* = marble, *c* = cement, and *t* = brick.

The Old Caldarium. κ, fig. 60.

The steps led into a round chamber of about 21 feet in diameter which we will call the Old Caldarium, because there is evidence to show that it was used as such during the earlier but not during the later period of the Baths. The surrounding walls, which do not appear to be all of the same age, are partly curved, partly straight.

On the east is a semicircular apse, with a small niche κ on the north side; the western wall, of opus incertum, runs straight with an orientation of about 118° . When we first examined the site, there was evidence that an ancient continuous floor of concrete had extended right across the chamber. Close examination of the surface of this floor showed that there was a circular crack γ, in the floor, 15 feet in diameter, and at about 3 feet distant from the walls; and excavation revealed a very remarkable heated bath of an hitherto undescribed type.

The earlier Roman heated bath-basins were built upon the *suspensurae* or hollow floors of heated rooms, as may be seen in the men's *caldarium* of the Forum Baths at Pompeii. There and in many similar cases a low wall was built across the hypocaust floor, so as to enclose a tank which was made waterproof with cement and marble veneer. In some cases the side and end walls of the tank contained hollow flue-bricks, thus materially increasing the heated surface in contact with the water. The plan was soon found to be uneconomical and not very efficient. The great thickness of tile, cement, and marble necessary to make the structure watertight, often not less than one foot between the furnace flues and the water, as well as the very bad conductivity of these materials, must have made the heating of a considerable volume of water an extremely slow process. In all probability it was the usual practice to heat the water in special 'coppers' before running it into such a warm bath-basin.

Alvei or bath-basins constructed at a later period were generally provided with a *testudo alvei*,¹ an invention consisting of a bronze circulating boiler built into the furnace flue, warmed directly by the hot air, and opening by a wide mouth near the bottom of the *alveus*.

In high-class bathing establishments the cold-water bath in the *frigidarium* was frequently of circular shape, and being sunk below the level of the floor, was provided with concentric steps for the convenience of bathers. In the structure of the Pausilypon bath we have a unique solution of a very neat problem in construction. It was an attempt to construct a circular bath with steps so that it could be heated by a complete investment of hot-air flues, running immediately beneath each one of the steps and under the bottom of the bath. It reveals in its construction a higher degree of skill in design and bricklaying than has yet been met with in similar structures; and as such it is to be regarded as a unique specimen of the heated *alveus*, as the last word in *balneae pensiles*, the valued invention of Orata.

So unlike was the construction to that of any of the other bath-basins with which we are familiar, that this explanation of its real purpose did not occur to any of the persons to whom the antiquity was shown. Among theories put forward one was that it had been a columbarium, another, an oven, yet another, a warm hollow in the floor of a sudatorium, but the finding of an overflow pipe showed that the basin had been intended to hold water.

¹ Roman Testudo Baths and modern Tortoise Stoves received their names for different reasons !



FIG. 62. THE OLD CALDARIUM. S = STEPS.

Structure of the Warm Bath-Basin.

The circular basin, surrounded by three concentric steps upon which the bathers reclined, occupied the centre of the floor of the chamber. The basin itself measures 15 feet in diameter. Hot air circulated from a praefurnium, 4 yards distant to the east, behind the risers and under the treads of the steps, as well as under the floor,



FIG. 63. FRIGIDARIUM OF THE OLD BATHS AT POMPEII.

After Gell, from *Smith's Dict. of Antiquities*.

so that the water got well warmed all round. An overflow pipe *d*, about 3 feet above the bottom of the basin, was found in the north-east side; and the finding of this conclusively proved the truth that the basin was intended to hold water and had not been used merely as a hot-air bath. The steps were formed in smooth cement of good quality, but the bottom had been overlaid with white marble, of which we found a few fragments.

The bottom of the basin was a *suspensura*, carried by *pilae*, each formed of a single tubular brick (fig. 151) 17½ inches high. The builder must have had a lot of trouble to get these *suspensura* floors water-tight. In this case the *suspensura* was about one foot in thickness, and was formed of two or three separate layers of a concrete of broken tufa spread upon the large tiles, *tegulae bipedales*, which spanned the distance from *pila* to *pila*. And over the tufa concrete was spread a layer of crushed brick concrete, and finally the layer of

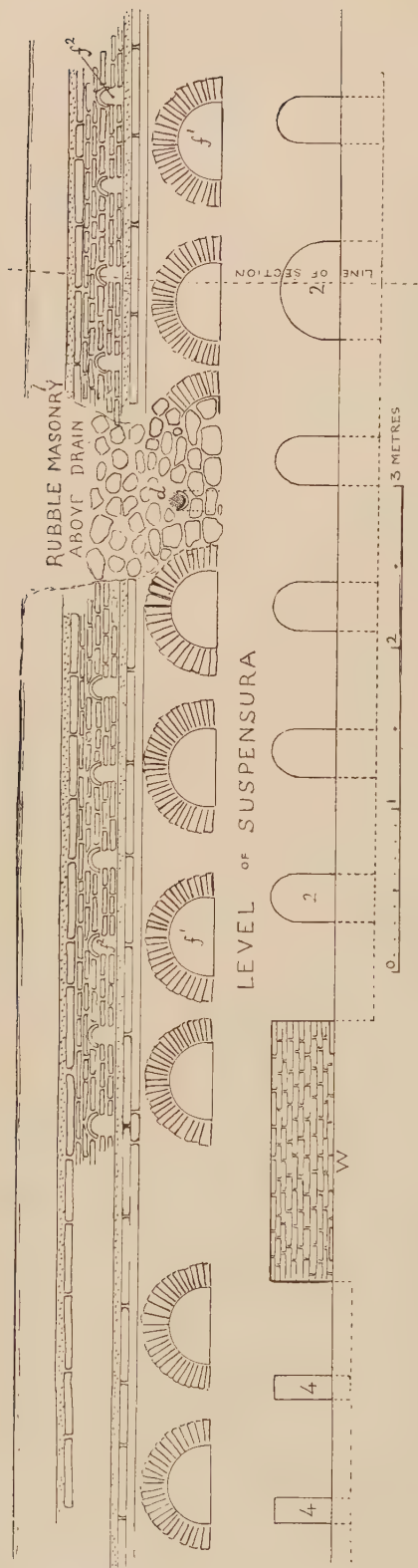


FIG. 64. ELEVATION OF THE SIDE OF THE HEATED BATH-BASIN NEAR THE MAIN FLUE 2 AND OVERFLOW CHANNEL *d*.

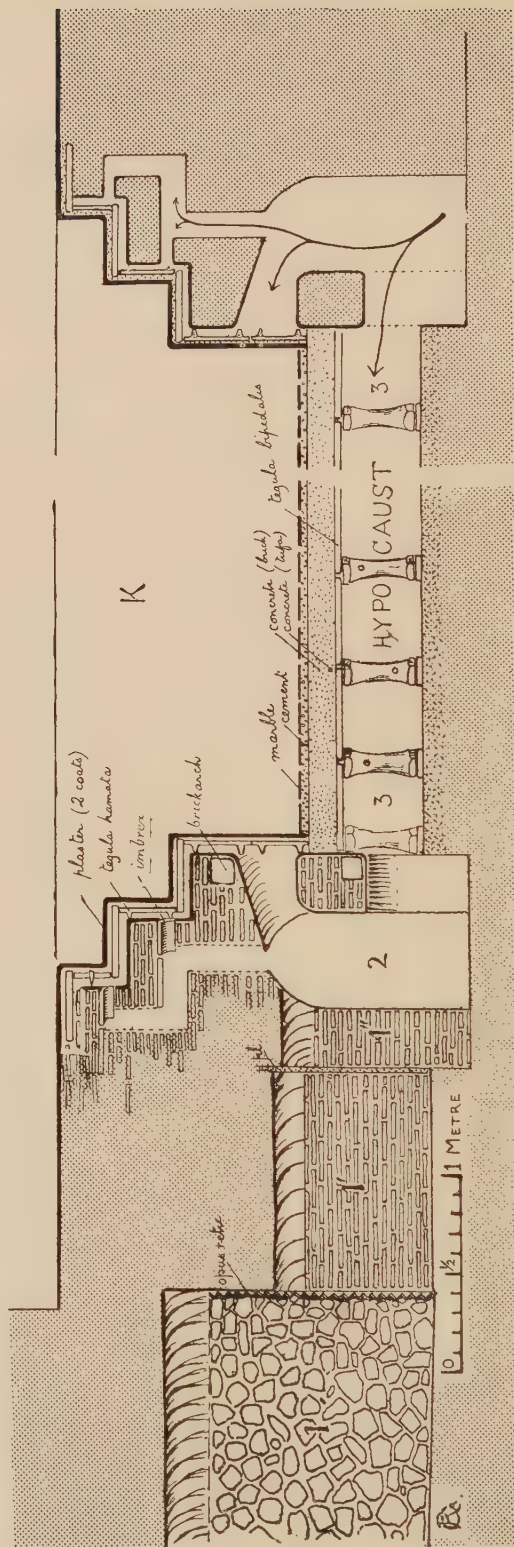


FIG. 65. SECTION THROUGH HEATED BATH-BASIN K AND MAIN FLUE 1-1".

The arrangement of the flues of the left of the section is shown reversed upon the right for the sake of diagrammatic clearness.

cement on which the marble was bedded. The hollow walls were formed of large bricks held in position by iron holdfasts fixed with plugs of marble: a method of hollow-wall formation which was certainly earlier than the use of the rectangular flue-bricks employed in the Lower Baths. The débris of a domed vault lie on the floor.

The bath was heated by a simple furnace, *hypocaustis*, on the east side, from which a flue 5 feet high, by 2 feet wide and 10 feet long led hot gases to a large vaulted flue, 2, embracing half the basin. From this the hot gases passed through six intake openings with brick arches, into the space 3 under the hollow floor, whence it appears to have been drawn into a second large flue, 4, embracing the other half of the basin, through six other apertures, five of which are square-headed and much narrower than the intake apertures on the other side. One, larger than the others, was no doubt used as a manhole by the builder. The two intake and exhaust flues form, as it were, two large arcs of the same circular tunnel, but are separated by two brick piers w, w, which are needlessly massive for the purpose of merely dividing the flues from one another, and obviously belonged to some older structure. The floor of the flues is sunk 18 inches below the floor upon which the hypocaust pile-bricks stand.

A series of vertical flues conduct hot air from the basement flues to the spaces under the concentric steps, as shown on the left of fig. 65. The lower horizontal channels f^1 , fig. 64, are spanned with arches of brick, but the smaller upper horizontal channels f^2 are covered by *imbrices*.

It stands to reason that the lighting of the furnace fire would be very unlikely to start a draught through so complicated a system of air-spaces. In the case of the Pompeian baths, provision was made for the lighting of special fires near the upcast flues for the purpose of starting the draught in the desired direction, and so it is fairly certain that there must have been provision for such draught fires here too.

There is evidence that the caldarium with its raised floor and the steps leading up to it from the passage were later additions to the establishment. The thick brick walls, w, in the middle of the circular bath certainly belong to an earlier arrangement of things. At a later date still, the marble investment was removed, the cavity filled with débris, and the space within the topmost step overlaid with the cement floor, the circular junction of which is still to be seen. It is owing to the concealment and protection afforded by this upper floor that the structural details of the bath below have been as well preserved as they are.



FIG. 66. WALL OF HEATED BATH. East Side.



FIG. 67. WALL OF HEATED BATH. West Side.
Showing the square-headed exhaust flues.

The Furnace.

A second furnace, other than that used to heat the circular hot bath-basin was found in the adjacent chamber M. The early Pausilypon Baths, like those at Pompeii, were probably solely heated by brasiers, and were built without hollow-walls, flues, or hypocausts. But whether this was so or not, it is certain that this furnace formed no part of the original building, for it stands isolated in the middle of a small plastered room, M, paved with a white marble mosaic with a border of two black bands. (Mosaic, fig. 153, no. 1.) The builders did not even trouble to take up the mosaic, but built the



FIG. 68. FURNACE ROOM M.

furnace directly upon it, thereby concealing all but a small part of the original floor space. The new praeternium F is raised 2 ft. 6 in. above the floor upon a concrete foundation FF (fig. 69) 7 feet square, and is carefully built in reticulate tufa (blocks 4 to 5 inches square), and with brick-shaped blocks of tufa at the angles (fig. 71). In ground-plan it is horse-shoe shaped: a brick arch is neatly turned over the stoke-hole, and the flue is circular. In the convex back of the furnace an ornamental horizontal row of six *brick* cubes, as shown in fig. 69, is introduced across the diagonal rows of tufa blocks of the opus reticulatum.

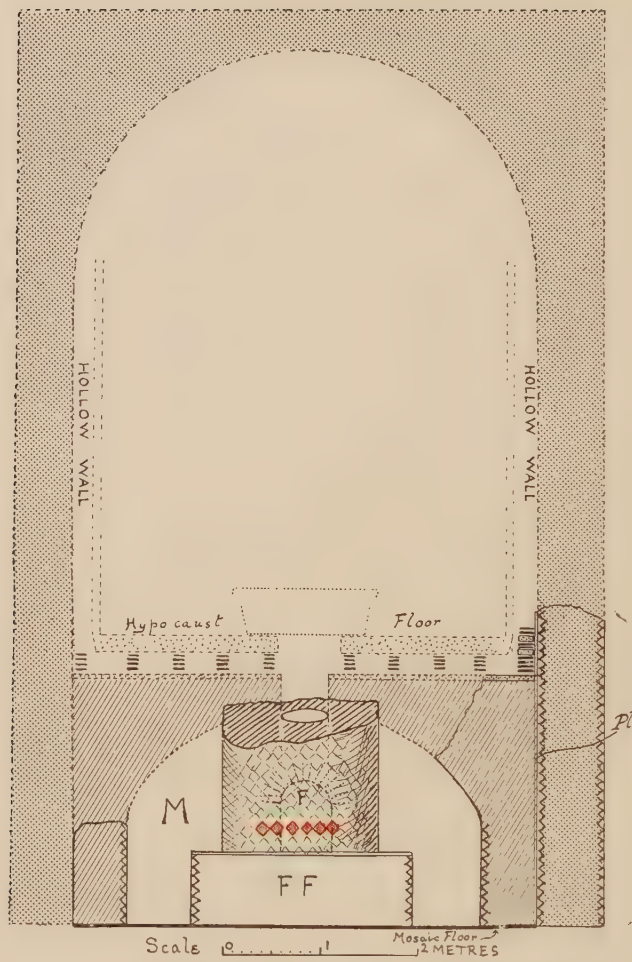


FIG. 69. CONJECTURAL RESTORATION OF BUILDING OVER
THE NEW FURNACE ROOM.



FIG. 70. RUSCONI'S PICTURE OF ROMAN BATHS.
From *Smith's Dict. of Antiquities*.

On either side of the furnace newer walls (line-shaded in fig. 69) were built on the mosaic pavement and against the plastered surface of the older walls (dotted in the figure): they were arched against the furnace-building in the middle, so as to support an upper floor. The lower courses of the wall round this floor were built of brick *lateritium*. The chamber was circular in shape, and judging from the fact that the centre of the floor is pierced by the flue of the *prae-furnium*, it may very likely have been a *sudatorium* with a pillared hypocaust heated by the flue, or a room for heating hot water in a 'copper' for the use of the bathers, as shown in our conjectural restoration (fig. 69).



FIG. 71. STOKEHOLE OF THE NEW FURNACE.

BUILDING TO THE NORTH OF THE UPPER BATHS

SOME 50 feet to the north (bearing 110°) of the hot bath-basin, surrounded by a raised bank of rubbish, are some well-built walls

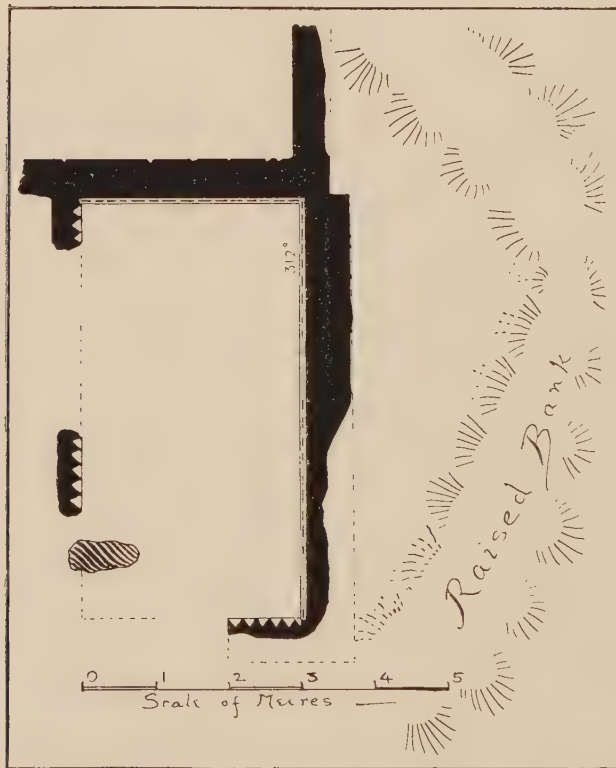


FIG. 72. PLAN OF BUILDING.

enclosing a chamber measuring 10 feet by 18 feet (fig. 72). These walls extended further, but whether they were connected with the Upper Baths or with a mass of brickwork 25 feet off to the north-east, is not certain.

The walls on two sides of this chamber are faced with brick, but the other two sides are reticulated. Their orientation is 312° .

BUILDINGS TO THE WEST OF THE UPPER BATHS

RUINS of several constructions are conspicuous on the slope of the hill to the west of the Upper Baths.

In order, from east to west, we see first the large chamber v, on the Vth storey, with part of its barrel-vault still standing (fig. 55).



FIG. 73. CHAMBER X.

It is noteworthy on account of the orientation of the walls being nearly at half a right angle to the direction of those of the Upper Baths. Internally the walls are plastered and the floor was of white mosaic.

Next we noted a strongly built wall, of opus incertum, which appears to have supported the south-west angle of some building on the VIth storey above chamber v. From it another wall extended southwards.

Then at a distance of a few feet and six feet lower down is a most interesting little chamber, x, with a white mosaic floor and a low white plastered vault, shown in sectional elevation in fig. 73. The eastern wall is partly of brick. In this chamber we found the upper drum of a fluted column (no. 10, p. 221), the fragment of a full-sized sculpture

of a Bull (p. 272); and on a piece of detached plaster the painting of a male figure, perhaps a bath attendant, holding out a towel or garment (p. 254).

Further westward and on the floor below is the larger ruin, Y, Z, with the Room with the Four Niches (figs. 56 and 74).

The Room with the Four Niches.

The floor of this room is 3 feet below the level of the Vineyard. The southern wall, undermined by much pozzolana digging, has unfortunately fallen: the north wall, built against the hill-side, shows that there were three vaulted chambers in the block. The building is clearly of two different dates, the north and partition walls having

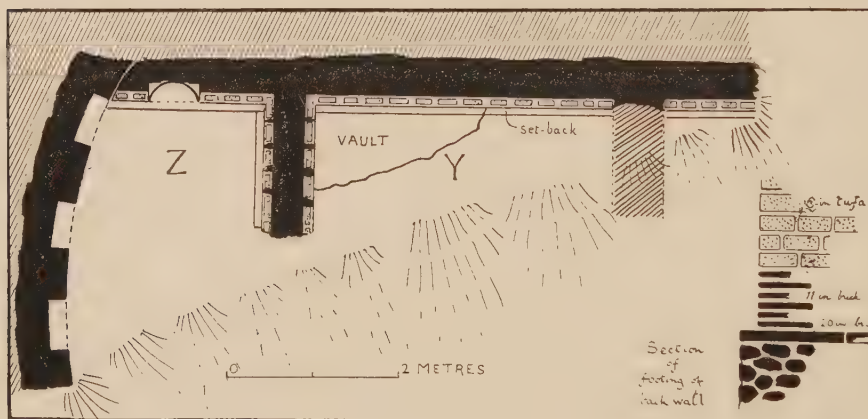


FIG. 74. ROOM WITH FOUR NICHES.

been built later than the western wall, as may be seen in the north-west corner, where the plaster of the latter has been hacked away to accommodate the north wall. Moreover, the walls are of different construction, the older west wall being of opus incertum, the later wall being of isodomous tufa.

The footings of the newer walls are carried up straight to the floor-level, above which there is a set-back of four inches. The rougher and wider-jointed work below the set-back is covered by one course of 20-inch bricks, above which course are six courses of 11-inch bricks and then the tufa wall built in 3-inch courses in neat isodomous ashlar, all as shown in the inset to fig. 74.

The spring of the barrel-shaped vault was $6\frac{1}{2}$ feet above the floor, and the chambers may each have been 12 feet long.

The westernmost chamber, z, is the most perfectly preserved of the three. The west wall, of opus incertum, is curved. In it at a height of 4 feet above the floor are 3 rectangular niches, each about 2 feet across by 1 foot deep, and there is a fourth niche, rectangular below but rounded above, in the middle of the newer back-wall.

Decoration. The west wall was plastered with hard plaster mixed with crushed tile (opus signinum), and was decorated with a Pompeian-red dado extending a yard above the floor. It was embellished with representations of green reeds and other plants, which were painted in a very natural manner. Above was a slight ornamental bead, marking the upper limit of the dado. The ground colour of the walls above was white or cream.

Further west are two walls close together which appear to have belonged to a passage or stairway leading northward, which has yet to be cleared. If we may judge by the general level and direction we should expect this passage to lead up to a space paved with a mosaic floor near the Water Reservoir described on page 127.



FIG. 75. THE 'BELVEDERE'.

THE 'BELVEDERE'

WE now pass in our survey of the Pausilipon antiquities to the western boundary of the property. There, high up on the top of the sheer cliff over the Grotta dei Tuoni, are the massive walls of an extensive building, x in fig. 76, one part of which we have named the Belvedere on account of the beautiful view of Capo Coroglio, and westward of Nisida, Cape Misenum and Ischia, which may be obtained from within its walls.

The building ends in a low curved wall on a tufa foundation about 4 feet in thickness, upon which wall are built seven brick-faced piers, which in the original plan may have been symmetrically disposed along the quadrant of a circle, but are not so now. The chamber within the wall measures 31 feet wide by 21 feet across the middle. The side walls and part of the back wall are faced with opus reticulatum, but the greater part of the back wall is of opus incertum and gives the impression of having been of more recent construction: it is channelled with two grooves, possibly for water-pipes. They are marked p in the plan in fig. 77.

A noteworthy architectural feature of the building is that the side walls are not in line with, or in any way bonded to, the curved wall, the corners of which are faced with carefully laid brickwork. Possibly in the original state columns stood against and within the piers. Columns in such a position would appear to continue the interior lines of the building, and would have carried an architrave with mouldings continuous with those of the cornice of the side walls. It is certain that the piers were covered with marble, for here and there are iron holdfasts firmly plugged in the wall with chips of marble, in the manner usually followed by marble masons in this region. The brick facing to the corners is ashlar into the reticulated work in six-course ashlar.

The side walls were frescoed—a red dado up to 3 feet from the ground, the main wall being decorated with paintings in yellow panels with red borders. The back wall of opus incertum is

covered with very thick plaster of poorer quality, which may well have been a later addition.

The way into this semicircular room is by a rather awkwardly arranged doorway through the north-east end of the quadrant wall, with some tufa-lateritium work at one side.

At the south-east some walls emerge here and there from the scrub and débris which require fuller investigation. They appear to



FIG. 76. HILL-SIDE BETWEEN THE BELVEDERE AND THE VINEYARD SITE.

extend about two-thirds of the length of two great water reservoirs, which lie to one side at a lower level. In our opinion, they belonged to a house of which some rooms were built over the vaults of the reservoirs themselves. The staircase at the south-east end of the reservoirs probably also belonged to this building and led down to a mosaic pavement described on p. 128.

A very massive wall, orientation 311° , marks the southern angle of the brick-faced building. A view of the south-western wall-face

from the old vineyard below is shown in fig. 76. From that point of view, under *a* on the left, may be seen one end of the quadrant wall and also a straight joint in the wall between two reticulated wall areas—the older work (*c*), like the newer work (*b*), having the wall-end faced with brick lateritium. The position of this straight joint is also shown near the left-hand *p* in fig. 77. The outer surfaces of *b* and *c* were plastered.

The wall *d* of which an angle projects on the south side, may have been continued over the ruins which crop out all the way downhill to the buildings on a flat terrace, which will be described as the Vineyard Site in a later chapter.

THE WATER SUPPLY

THE principal facts as at present known about the plan of the water conduits by which the Pausilypon Baths were supplied are as follows. One underground channel, with wells at short intervals, came from below the nymphæum, and led between the theatre and the odeon. It was opened by Mendia and was found to be built in neat isodomic masonry, and was sufficiently large for a man to walk along. According to Signor Acampora's account, the water came from an aqueduct which ran under the theatre; there was a well to the south of the temple, and a branch went further skirting the east end of the odeon. To the south of the odeon some 8 yards of cuniculus of about the height of a man were opened in 1842, and a conduit from it no doubt discharged into the big reservoir. The course of the aqueduct is indicated in the large map from hearsay and must therefore not be taken as authoritative, for we have no first-hand information concerning it.

A low-level branch of the aqueduct is believed to have run down the bottom of the valley near the road, presumably to supply the Lower Baths on the beach. In it a peasant found the two inscribed lamps *f* and *g* described on p. 286.

The Water Reservoir.

This large structure consists of a pair of tanks, partly excavated in the hill and partly enclosed by a strong retaining wall measuring 4 ft. 4 in. thick, at a height of about 3 feet above the floor of the tank. They are 64 feet in length by 19 feet in width, and are completely vaulted over. The side walls measure 6 feet to the spring of the vaulting, the total height to the crown of the vaulting being 13 ft. 4 in.—a height which, curiously enough, is identical with that of the somewhat smaller reservoir near the Forum Baths in Pompeii. The two tanks are separated by a 3-foot wall, which is pierced by four openings with pointed arches 5 feet high by 4 feet broad, one of which is sketched in elevation in fig. 77. The only openings into the two tanks were three round shafts or well-holes perforating the crown of the vault of the eastern tank and a small oval window in the south-

east wall, through which a dim light enters and which may have served as an entrance.

The capacity of the tanks would not have been much short of 100,000 gallons.

The outlets are arranged as in the Pompeian tank. One in the

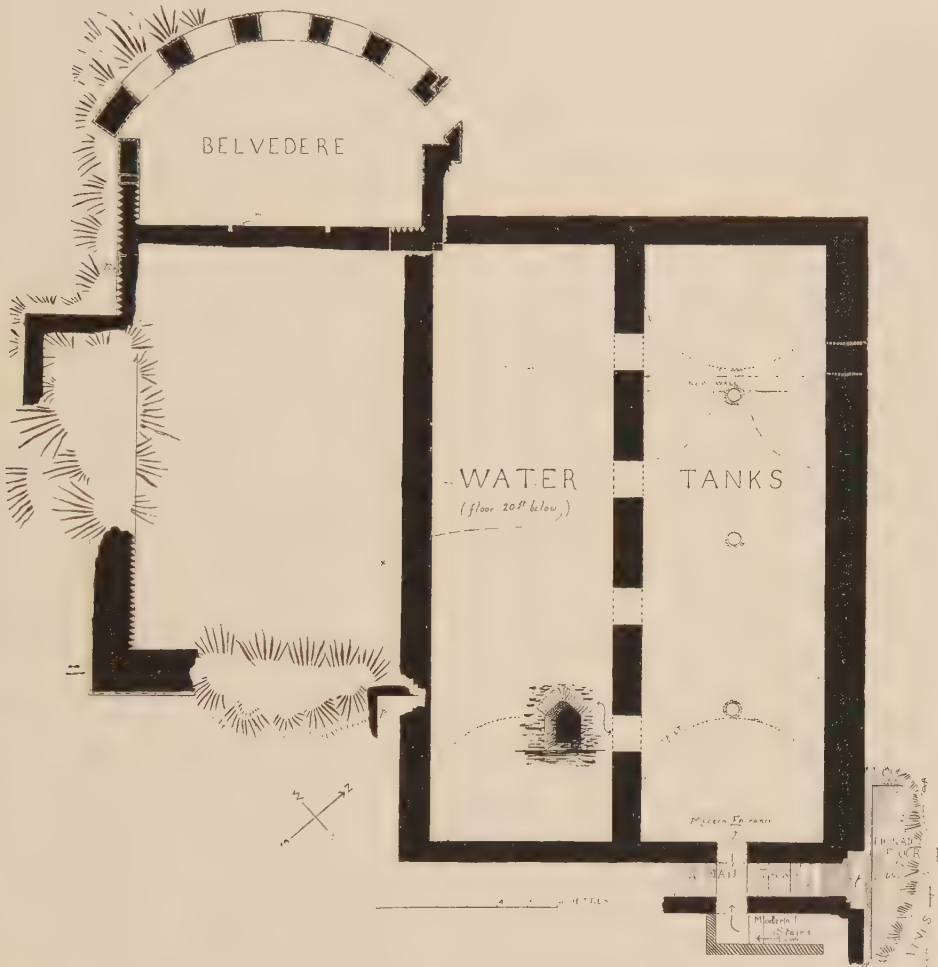


FIG. 77. PLAN OF THE BELVEDERE AND THE COVERED WATER RESERVOIR.

eastern wall, raised about 2 feet from the floor, permitted water to be drawn off without disturbing sediment, and there may have been another on the bottom, for emptying out the tank for cleaning. The pipes would probably have been closed by valves of bronze. There appears to have been another opening in the south corner of the western tank.

The accumulation of building-débris over and round the tanks indicates a terrace or rooms, as we find them in Pompeii. And we discovered a staircase at the south end which would have afforded access from a peristyle (?) below. The steps of lava or piperno rock, each 3 ft. 7 in. wide by 14 inches broad, with 8-inch risers, have been built between the end wall of the tank and a less massive wall, 2 feet thick; the interior surfaces of both walls were plastered.

The land to the east of the tanks was under cultivation, so that we were not able to uncover much of the site. However, by digging a trench 8 feet deep we found *in situ* at the lower end of the stairway a marble threshold stone, *t*, with sockets for door-hinges and a bolt-hole, the *foramen in quo ianuae pessuli descendunt* (Marcell. Empir. 17), on the inner or staircase side. Beyond the threshold is a white marble mosaic pavement with a border formed of a broad black band between two narrow lines of white tesserae. We found the northern corner of the pavement at about 6 feet north, where there was another doorway, but we were not able to continue the excavation partly on account of the great mass of soil to be moved, and partly because it was not permissible to move the vines above, and rarely have we more regretted the cessation of work. This pavement is about 8 feet below the level of the vineyard, and is about the same level as the hot bath-basin of the Upper Baths (Storey VI). Its complete exploration is greatly to be desired.

So far as we were able to make out, the buildings which stood above the tanks were on the same level and probably formed a part of the building near the edge of the cliff which we have already referred to as the '*Belvedere*'. Doubtless the connexion between the two sets of constructions might be easily demonstrated by clearing the intervening piece of rough ground.

In excavating the staircase we found several pieces of curved mouldings of a beautiful marble like cipollino, but of a delicate mauve tint. We figure the section in fig. 144, *p*.

The north-eastern tank in recent times has been used partly as a garden store-room, partly for rain-water storage, and its walls have been mutilated for the purpose. Two holes have been hacked through the side and south-east walls. That through the south-east end wall is reached by a flight of eight steps and has been cut right through two walls and through the ancient stairway between them; a small modern cistern has been constructed within the eastern tank by building a new cross wall and by closing up one of the pointed archways in the central longitudinal wall.

Although houses in this region in Roman times were probably better supplied with water from Serino in the Apennines than they are now, yet in the case of almost every villa of any pretensions a large cistern was also thought necessary for such emergencies, as a failure in the supply, or the need of a large flow of water for a short period. For example, there are ruins of twin cisterns, almost identical in dimensions and in construction, and therefore probably contemporaneous, with this Reservoir on the adjoining hill above the Vallone di Lampi (p. 172). There, too, the cisterns communicated by openings spanned by pointed arches, constructed of similar brickwork. Another very large Roman water-tank, now used as a barn, is one of the 'sights' of the neighbouring village of Marechiano. It is under the principal farm-house. It measures $19\frac{1}{2}$ feet wide by $19\frac{1}{2}$ feet deep by 72 feet long, and its capacity is estimated at 175,000 gallons.



FIG. 78. LEAD WATER-PIPE.

The Upper Baths were doubtless supplied direct from the reservoir. Large quantities of the lead conduit pipes were removed by the Marchese del Tufo, who, when in possession of the estates appears to have added considerably to an income derived from excavating pozzolana, by mining lead pipe! Fortunately, a short length hidden amongst the débris encumbering one of the rooms of the *Thermae*, escaped him. It is about a yard in length and of the characteristic pear-shaped section with a pinched upper margin, measuring $1\frac{3}{4}$ inches by 1 inch inside, and a little over 2 inches across outside. The most important thing about it, however, is the short enigmatical inscription in relief:

[GV]A · INAIRDAH · INAI[ART · SEAC]

but which on being reversed reads: CAES · TRAIANI · HADRIANI · AVG., and means that alterations or additional plumbing were carried out in his reign—a fact of the greatest importance for the chronology of our site.

A local builder supplied information of a yet larger pipe, $2\frac{1}{2}$ inches in diameter, which, according to his account, formerly ran from east to west across the pozzolana quarry: its continuation is probably still lying beneath the rectangular vineyard above the Scoglio di Virgilio. It would have probably supplied the buildings on and under the Scoglio.

Various ends of underground water-channels may be seen under the hill above the Vineyard Site, on the cliffs of Trentaremi Bay, and beneath the Scuola di Virgilio.

The Aqueducts.

The aqueducts and conduits of Pausilypon were plentifully supplied with water by a branch from the main aqueduct which brought water from above Serino to Naples and to the Phlegraean towns, including Misenum. The bringing of pure, cold water from a distant valley of the Apennines, more than 20 miles away, and the conducting it to so many reservoirs scattered over an arid volcanic region extending along a line of 8 miles or more, was an engineering feat of which any civilization might have been proud.

The water which was laid on at the Pausilypon Villa came from the Vallone del Sabato, not far from Abellinum in the Country of the Hirpini. The course of the ancient aqueduct, carefully explored at the command of the Viceroy Don Pietro di Toledo in the sixteenth century, was described by Lettieri, and was found to run underground as far as the Mercato di Serino, thence across two bridges it passed Ajello, Cesenale, Bellezza, and the Piano di Forino. An underground cutting in the rock, three miles in length, brought it to Perduro and Pandula. It passed below Tor di Marcello and Castel S. Giorgio to Taverna di Lazzaro and the Serra di Paternò. Then following the slopes of the hills above Sarno it reached Episcopia, whence it was carried on arches, of which ruins are still visible, to Palma. Near Palma, side branches led to Pompeii and Nola. Another underground channel passed Santa Maria del Pozzo to the Masseria La Preciosa; and then began a series of high arches, hence the name Pomigliano d'Arco, which led on to Casalnovo, Afragola, S. Pietro a Patierno, and S. Giuliano. In the Cupa di Miano still stand the high arches, the Ponti Rossi, over which the water flowed and entered a tunnel in the hill which conveyed it to S. Efremo, to S. Maria delle Vergini, and over other arches near the Museum to S. Agnello.

At S. Agnello the aqueduct divided into two branches, one of which

proceeded direct to Neapolis, and was the means by which the troops of Belisarius entered the town in A.D. 537; the other branch skirted the lower slopes of the hill of S. Elmo, and after giving off a side branch to Monte Echia (Pizzofalcone), where the Villa of Lucullus was situated, passed right through the ridge of Posilipo and then right across the Phlegrean Fields to Puteoli, Baiae, and to the Piscina mirabile at Misenum.

Pausilypon, according to one account, is stated to have been supplied by a conduit which left the main near its entrance into the hill and ran along the eastern face of the hill, a second conduit along the western face being devoted to the supply of Nisida; but it not only appears improbable that two separate channels should have been constructed to supply two places so near together, but the channel which has actually been discovered does not correspond with either description, being over a third of a mile inside the mountain.

When the Grotta Nuova di Posilipo was made for the tramway through the hill in December, 1882, the engineers were surprised to find that the Romans had been in the heart of the mountain before them, for their excavation cut obliquely into a Roman aqueduct running in the direction of the Villa Giulia. For the exact measurements and position of the intersection of the Roman aqueduct and the tramway tunnel, I am indebted to Signor Panunzi. From its eastern entrance, *testata* (60 feet above sea-level), the tunnel rises with a regular gradient of 1 in 38. At a distance of 690 yards the southern wall intersects the aqueduct at a height of $15\frac{1}{2}$ feet above the tunnel floor, which is there about 115 feet above sea-level. The floor of the aqueduct at the point of intersection is therefore at an altitude of 132 feet above sea-level. In section, the cuniculus is oval, $5\frac{1}{2}$ feet high by $2\frac{1}{2}$ feet wide. The upper part is covered with plaster mixed with rough sand, but the lower part forming the water-channel is of opus signinum and is encrusted with a stalactitic deposit from the hard water. The direction is from north to south, though the line is anything but straight.

Inscriptions of great importance occur upon the plaster, apparently made with a pointed stick before it had set. At intervals of $96\frac{1}{2}$ feet a consecutive series of numerals indicates the distance presumably from the southern end of the aqueduct. They run:

DCCC · CCIO · CIO (here is the tramway tunnel) C · CC · CCC · CCCC · D, or from 800 to 1000, and presumably from 1100 to 1500, and measure Roman feet (taken as 0.97 foot each) with an accuracy to within three inches.

At one spot some cheery person has scribbled 'LIBERI VIVAS' ('Long live Liberius'); but more important still are inscriptions thrice repeated which enable us to fix the date of this work as A.D. 65 and its destination Limon, the villa of Pollio Felix, the friend of Statius.

On the side of the wall was thrice written, though with slight variations¹:

Macrinus Diadumeni Aug. l. proc. Antoniani disp. hic ambulavit a villa Polli Felicis quae est epi Limones usque ad emissarium Paconianum Nerva et Vestino cos (65 A.D.).

Hence it follows that the villa of Felix Pollio, mentioned as 'Limon' by Statius, *Silv.* ii. 2, was locally known as ἐπὶ Λειμόνης; and though it has been suggested that Limon was the old name for that part of the shore of Posilipo which is now known as Mergellina, yet it may equally well have been a tract nearer the Capo di Posilipo, and so would have been nearer to and more conspicuous as viewed from Sorrento, where Statius composed his poem. At the Capo di Posilipo, the imposing group of buildings on the now submerged site of the Rosebery Region would have been very likely to have been those of the extensive villa of the wealthy Roman, whereas at Mergellina there are absolutely no remains which can be pointed to as those of Felix Pollio's villa.

The exact period when Serino water was first brought to Neapolis and on to Limon and to Pausilypon is uncertain. The entire aqueduct has been associated by some archaeologists with the need of fresh water for the naval port of Misenum; but although it may have been prolonged for that purpose yet the greater length was certainly much older.

We have good reasons for believing it to have been anterior to the age of Augustus. It is far from probable that a Roman of the class of Vedius Pollio would have chosen a site for his villa which was on the point of an arid volcanic promontory, destitute of a good water supply. Baths such as he would have considered a necessity require far more water than could have been provided by rain-water cisterns. A more convincing argument may be drawn from the water-works of Pompeii itself. There Oscan letters, used as masons' marks on fountain-basins in certain pre-Roman buildings, point to the existence of a continuous water supply during an epoch anterior to the founding of the Roman Colony, and it has been suggested by Mau that

¹ *Notizie degli Scavi*, 1883, p. 21; Minervini, *Nuove Scoperte in Napoli*, Roma, 1883; Mommsen, *Hermes*, 1883, p. 158. See *Inscriptions*, p. 213.

the great aqueduct was built during the time of peace and prosperity in Campania between the Second Punic war and the Social war. It is unlikely that so great a work could have been undertaken for Pompeii alone ; Neapolis and the towns beyond must have contributed to the cost of construction.

Numerous plumbers' inscriptions testify to the continuance of the supply in later years. Pontanus, *De Magnific.* c. 9, says that within his own recollection in the ruins between Baiae and Puteoli, there were found many *fistulae plumbeae mirae crassitudinis* which bore the name of Claudius Augustus. In Naples a lead pipe has been found similarly inscribed to the pipe found in the Pausilypon Baths, except that in this case the inscription was not reversed. The general failure in the supply may have been due to the cutting of the conduit by Belisarius in the sixth century.



FIG. 79. VINEYARD SITE. North Side.

THE VINEYARD SITE

NEAR the south-west corner of the estate there is a rectangular area which at some time or other has been artificially levelled, and which may be conveniently referred to as the Vineyard Site. A few straggling vines bear witness to a former attempt at culture and to its failure, for although the land lies some 85 feet above the sea, its arid surface is much exposed to salt-laden winds. Now, within a waving fringe of canes, the ground is covered with *Achillea* and *Ferula communis*, and with many other plants; it is a charming field of wild flowers, a pleasant sight in this land of so much forced cultivation.

The many ruined walls which peep out between patches of *Lentiscus* and tussocks of grass on the hill-side above, and jut out over the crumbling cliffs to west and south, show that we have here the last vestiges of a terrace with buildings on both sides, in all probability continuous with the terrace in front of Mr. Foley's house, which according to our enumeration is approximately on a level with Storey IV of the substructions.

North Side of Vineyard Site.

The ruins in the best state of preservation are those on the north side of the vineyard, where they have been protected by an accumulation of débris rolled down from the steep slope of the hill. Here we found a vaulted passage 5½ feet wide and 9 feet high: it extends for about 17 yards and then ends abruptly at the edge of the cliff, where a fragment of its rough concrete vault, A A' (figs. 76 and 79), stands as a weatherworn arch at the height of a sheer 85 feet above the sea. Through the aperture an entrancing view is obtained of the cliff-girt bay of Trentaremi, of pine-clad Nisida, of Misenum, of Procida, and of Ischia in the misty distance.

The side walls of the passage, which, before the cliff fell, undoubtedly extended much further westwards, are faced with panels of reticulate tufa between angles of brick lateritium, disposed as shown on the plan. On the south, 20 feet of wall and a buttress are still standing. The north wall is in a better state of preservation:

and patches of the original plaster adhere here and there. It is pierced by a doorway opening into a small, square, vaulted room B, without windows, which gives the impression of having been used as a store-room. The walls show no traces of colour, but are coated with fine, white plaster of the very hardest quality. The corners too, have been eased off with a small oblique filling, so as to allow no nook for dust. Like most of the larger Pausilypon buildings, this one is not all of the same date, for the two sides of the entrance to the first 'store-room' are clearly of different periods: being brick lateritium on one side, two-coursed tufa on the other (fig. 79). Of the westernmost chamber, *b*, fig. 80, only the near corner is left, the rest having fallen with the cliff.

A cunicular passage, 2 ft. 6 in. high, which may have been an aqueduct, opens on the level of the vineyard into the room c. It apparently comes straight from the middle of the hill and passes through the north wall of the passage obliquely, but we had no time to remove the rubble which blocked it and explore it further. Within a few feet are the remains of another vault with a span of some 16 feet.

As seen from the vineyard, the northern slope appears to have been laid out in great steps or terraces; the appearance is due to the persistence of the north walls, *D*, *D'*, of chambers which were built against the hill-side and have acted as retaining walls to the rubble for twenty centuries. Parts of the reticulated surfaces of two of these walls are shown in the photograph.

Near the eastern end of the slope, in particular, there are about twenty yards of well-preserved reticulate wall supporting a fragment of vaulting. Near by lies a large block of white marble (fig. 146, *b*), a piece of the architrave of some large and important building that is unlikely to have stood very far away.

Vineyard Site (West Side).

When the ground was cleared for the vines, the loose stones and blocks of concrete were piled up along the edge of the cliff so as to form a dike, in which canes grow luxuriantly. Outside this dike protrude the jagged ends of broken walls, the partition walls of rooms that have fallen into the sea. Two of these rooms, *G*, *H*, measure 37 ft. 6 in. and 23 feet wide respectively—the plaster in the latter was coloured blue. A few fragments of coloured marble pavements and facing, lying in niches in the cliff-side, indicate the wealth of finely decorated building that has fallen into the sea below.

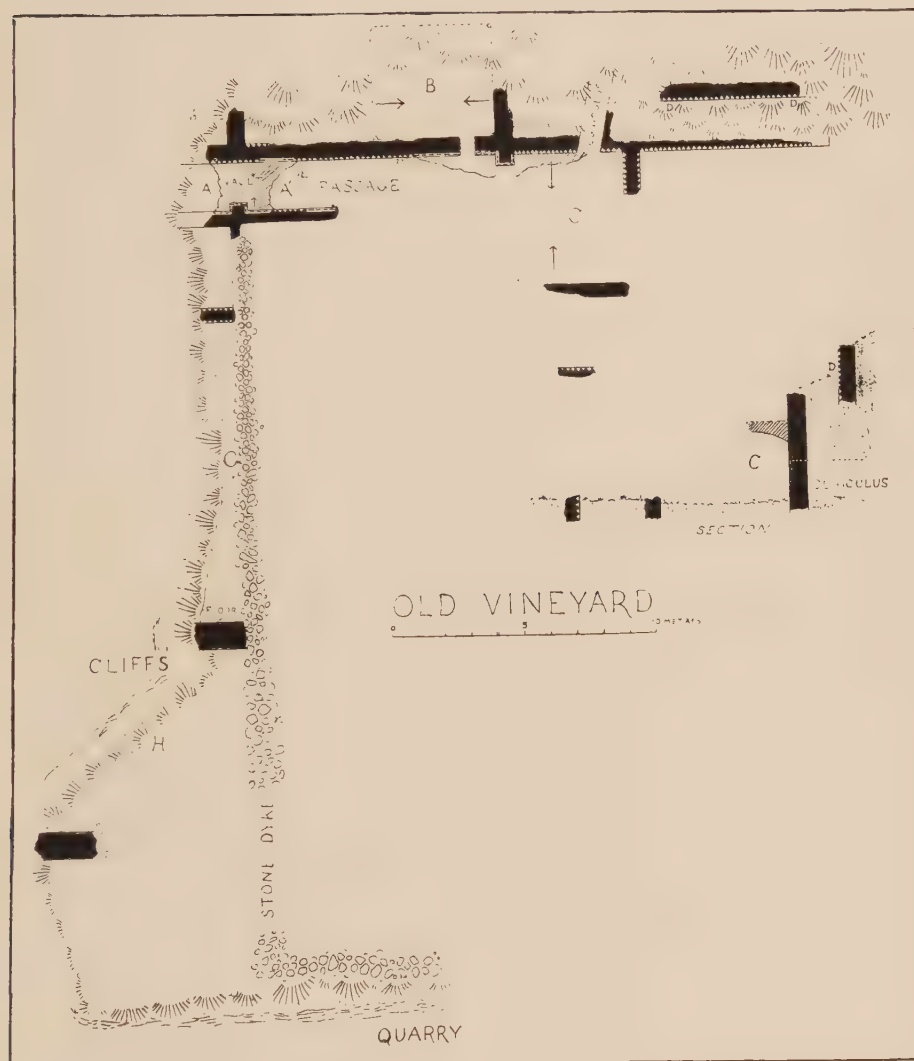


FIG. 80. PLAN OF WESTERN SIDE OF THE VINEYARD SITE.

Vineyard Site (South Side).

The rock under the south side of the old vineyard has been cut straight down almost to the sea-level by post-Roman quarriers of stone.¹ Flush with this rock-face, and threatening to fall, are two ruined walls with a passage between them, evidently once a part of a considerable building (fig. 81). The passage, 32 inches wide, was vaulted and formerly ended in a curved flight of steps, *s*, which turned round



FIG. 81. VINEYARD SITE. South Side.

to the south and gave access to a large room, *κ*. The southern walls and floor of this room *κ* have long since been undermined by the quarrying in the semicircular stone-pit below, but from traces of plaster which still adheres to the face of the north wall, it appears

¹ The tufa cliff near the western end of these ruins exhibits a geologically most interesting section. The rock has been hewn across the course of a small valley in the yellow tufa, which has become filled with volcanic mud which has consolidated as grey tufa, conspicuous on account of the contrast of colour, and clearly shown in our illustration figure 81.

that the dado was coloured red on an undercoating of yellow. The width of the room, if we may judge from a projecting end of wall-

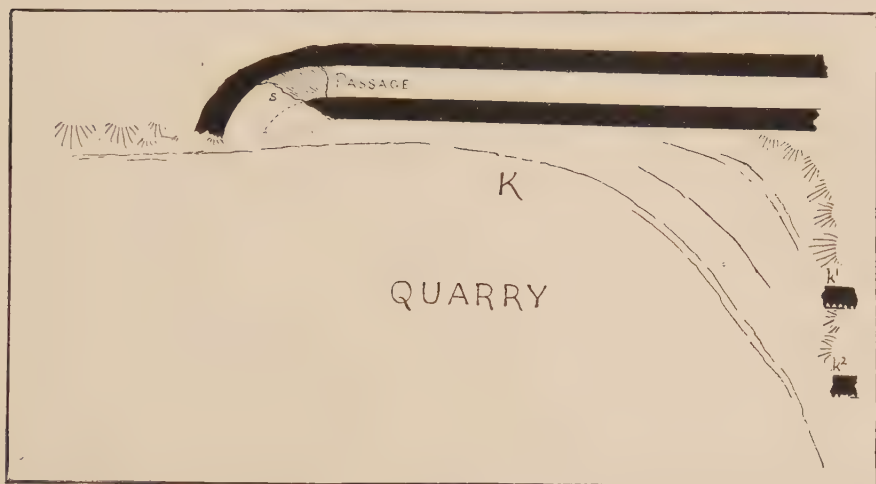


FIG. 82. GROUND PLAN OF WALLS K SHOWN ON THE BRINK OF THE QUARRY IN FIG. 81.

foundation, k^1 , to the east, was 12 or 13 feet, or if we measure to another wall, k^2 , parallel to these and standing 6 feet further south, would have been about 18 feet. The foundations of these two walls are shown in figure 81 below a group of aloes which are growing in débris between the walls.

A continuation of the first-mentioned passage may be traced at a distance of 15 yards further east, at a point where it opens into a somewhat wider passage, J, of which only a short length leading in a north and south direction now remains. To the east of this was a small chamber, L, vaulted from east to west, and ornamented with panelled decorations in red. The

floor of this chamber was not very thick when first laid, but in the course of time it had been increased in thickness to 12 inches, the top layer of opus signinum having been added long after the walls were

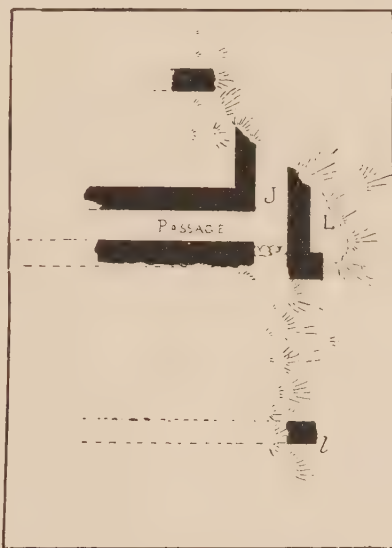


FIG. 83. PLAN OF WALLS. VINEYARD SITE. West Side.

plastered. The level of the floor is about 10 feet (or one storey) below that of the Room with the Three Niches, which is somewhat raised above the floor of Storey IV.

The wall *l* to the south is in a line with, and may be continuous with *k*¹; 24 yards southward is the corner of a room which was differently orientated to *j* or *κ*. And 3 yards further a tiny fragment of floor, left standing on a pillar of tufa, indicates the southward extension of building, with a floor-level 10 feet below that of the upper floor on the Scoglio di Virgilio.

Some 16 yards further south, lies a pavement of crushed marble which belongs to the Scoglio and Scuola buildings.

The Graeco-Roman Building.

It was near this spot that the fragments of architectural ornaments in terra-cotta described on p. 277 were found. They were much broken it is true, but their abundance is a sure indication that a building in the Graeco-Roman style must have existed at or near this spot. We have already suggested that the water supply of the region may have a far higher antiquity than is commonly supposed, and we would now suggest that these terra-cotta ornaments came from a building of the age of the similar ornaments found at Civita Lavinia and elsewhere, namely of the second or first century B.C.

In any case they are pre-Augustan in period and should be critically compared with the beautiful series of architectural tiles and bas-reliefs in terra-cotta which are exhibited in the Papa Giulio Museum in Rome.

SCOGLIO DI VIRGILIO (xxxiii)

IN the days of the prosperity of Pausilypon the mainland extended southwards as a long, low promontory. The site is now dominated by a picturesque overhanging crag, known as the Scoglio di Virgilio, the mythical scene of his magic exploits, but in his day it was completely hidden from view by superincumbent buildings of which the weatherworn ruins are all too scanty to clearly reveal their whole plan and extent.

There is, however, sufficient evidence that the buildings formed an imposing pile of several storeys in height. Owing to the lie of the ground, the building was in two differently orientated blocks. The orientation of the first floor is that of the Scuola, towards Vesuvius, but the rooms on the second and upper floors face WSW.

Presumably the approach to the building was by two parallel passages still extant, AA' , BB' , which are separated by a wall 28 inches thick and about 12 yards in length. To the east of the wall the corridor AA' , 5 feet in width, was floored with a concrete made of fragments of beautifully coloured marbles; this led to a room or terrace similarly paved, which was supported on arches at a height of 30 feet above the present sea-level. Almost the entire construction has fallen into the sea; only the foundations of the piers and a narrow edging of the marble pavement are left: the latter may be seen from below as a bright line against the rock-side (fig. 97, *b*). At *c* a staircase cut in the tufa led to the upper floor.

On the west of the wall a small flight of five lava steps led from the crushed-marble pavement to the other passage, BB' , parallel to the first but nearly 4 feet higher, and leading to a longer flight of stairs. These stairs have now fallen away, but scars of the risers and treads marked on the side wall of opus incertum, show their number and position, and also that the stairway has the orientation of the upper part of the building. It led to a landing *D*, on the left of which opened the door of a room, *F*, paved with opus signinum, laid 5 inches thick on the rock. This second floor is 18 feet above the level of the



FIG. 84. PLAN OF STRUCTURES ON THE SCOGLIO DI VIRGILIO.

crushed-marble pavement of the floor below, which was reached by the other steeper stairway c. The side walls of the stairway are plastered with a very hard plaster made with finely pounded marble and painted red: the same plaster covers a red-coloured step at the base of the western wall.

Large masses of fallen vaulting show that over the whole of this part of the building there was yet another storey still, which was also floored with opus signinum.

The next room, E, is at a somewhat higher level, its signinum floor being raised 28 inches above the red-plastered step. The eastern wall is reticulated and, near the doorway at all events, was threaded by a course of red brick at 16 inches above the step.

The south wall has fallen, but the margin of the floor laid on solid rock is still fairly defined. It is not quite certain whether this chamber was part of a larger room G beyond, the southernmost limits



FIG. 85. BASES OF RIBBED STUCCO COLUMNS ON THE SCOGLIO DI VIRGILIO.

of which are indicated by grooves for wall-foundations, cut in the tufa rock near the brink of the cliff.

The top of the rock is covered by well-established tufts of thrift, grass, and other hardy vegetation, forming so attractive a patch of verdure, where, owing to the salt spray, plants do not readily thrive, that it seemed a pity to carry excavation further on this site. Just beyond the grass a small piece of the cement floor still bears the impressions (g) of pavement slabs, with tiny chips of the marbles still sticking in the corners, showing it to have been covered with carefully cut trapezoidal slabs of white palombara fitted round squares of Porta Santa marble (p. 248).

The level of this floor, about 52 feet above sea-level, is approximately about 12 feet below the level of the Vineyard Site.

At about 38 feet from the south wall and 21 feet from the west wall are the plaster columns, H, in high relief, already referred to as 'pilasters' in *Archaeologia*, vol. 58, p. 32. The columns, originally four in number, were grouped round an alcove built in the corner of a room and raised above the floor on a plinth 4 feet high. Judging from the jointing or rather absence of jointing of the masonry, this corner was originally empty, the sides being finished with a reticulate facing continuous with that of the walls of the room. Against this, perhaps as an afterthought or later improvement, the plinth, columns, and alcove were added, but how long after the original building is uncertain. The columns, constructed of brick covered with hard stucco, were 22 inches in diameter and therefore presumably about 18 feet in height, and like the plaster in the recesses between them, were decorated with paired, vertical, incised lines at regular intervals. The base is of a somewhat elaborate nature, with two tori with bead ornaments in relief. A base is shown in fig. 85, but the bead decoration has not come out in the photograph. Where the plaster has broken away we see that the more elaborate base has been modelled in stucco over a smaller simple, squared base of a Tuscan or Doric column. This feature is of interest because it shows that changes in the architectural style of decoration of this room were made, probably by successive owners, and that the change was one from a simpler to a more ornate style. Red appears to have been the predominant colour used in the decoration of the walls.

Near by, perhaps in the upper storey, was a wall decorated with a wheat-ear pattern painted in green and cream upon a black ground.

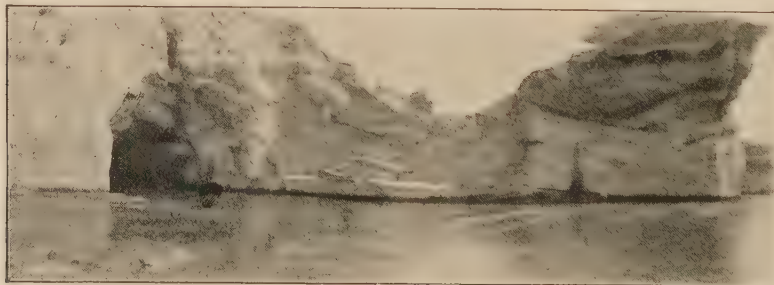


FIG. 86. GROTTA DEI TUONI AND THE SCOGLIO DI VIRGILIO.
From a photograph by the author published in the *Geographical Journal*, 1897.

THE SUBMERGED REGIONS OF POSILIPO

MANY who have delighted in the mural paintings from Pompeii that are preserved in the Naples Museum and have valued the light they throw on Roman life, will perhaps have glanced but casually at some of the smaller frescoes, blurred sometimes, and half obliterated, that depict wondrous edifices rising Venetian-like out of the water. With their festooned colonnades, their quays bedecked with statuary, they seem the fantastic creation of a mural artist who, in the adornment of his wall-spaces, spurned reality, gave free rein to his imagination, and created a land of enchantment.

We hope in the following sections to convince the reader that what many have hitherto passed over as merely charming conceptions, are quite simply 'views' of the seaside buildings of wealthy Romans in Campania, and a trip round the south coast of Posilipo in a rowing-boat, on a day when the sea is like glass, will go far to convince him, if he will lean over the gunwale and watch, as he passes them, the vestiges of ancient buildings that have sunk with the foreshore; for, in our survey of some 40 acres of this submerged foreshore we have found a marvellously complete series of foundations of the seaside buildings round Pausilypon which have sunk since the Roman period.¹

No spot on the Italian littoral, extensive as that littoral is, lends itself to the development of the peculiar style of marine architecture which we meet with in the paintings, so well as this short strip of Campania that lies between Misenum and Pausilypon.

The requisites are: an almost tideless sea, comparative shelter, a relatively narrow foreshore backed by the cliffs of a soft volcanic rock, easy to quarry, hardening in use: these conditions obtaining, we have a line of such magnificent watering-places, Misenum, Baiae,

¹ We have already described many of these remains in *Archaeologia*, vol. lviii, and we must return thanks to the Council of the Society of Antiquaries for permitting us to reprint many of the figures used to illustrate the original account printed in their journal. The site-numbers refer to the numbers in that report.



FIG. 87. QUARRY-CAVES IN TRENTAREMI BAY.



FIG. 88. TUFA QUARRIES, TRENTAREMI BAY.

Puteoli, Pausilypon, as did not exist elsewhere, though no doubt there may have been isolated instances of sumptuous palaces built out into the sea, as at Formia or Antium.

The Pompeian frescoes, so far from depicting a wonderland, fell probably much below the grandeur of the reality in their presentment of these water palaces. Gleaming white edifices rose from a blue sea; backed by the luscious verdure of the sloping gardens, the *tout ensemble* must have been extremely beautiful, whether softened by the haze of a summer morning, or with the hard outline imparted by the glare of noon, or tinted by the low rays of sunset.

Who runs may read; the ruins we discern under the water or just awash and those on the hill-side above them, give us not the mere painted sketch, but what is left of the buildings themselves, on their incomparable site, in their position and extent. We can see what is left now, growing less, alas, with every year; time, storms, efface and deface; and not least among engines of destruction is the speculative builder, abroad now on that historic slope, for after a lapse of nineteen hundred years Pausilypon has been rediscovered as an attractive summer resort.

I. THE TRENTAREMI REGION

The Ancient Quarries.

A great deal of the building-stone used at Pausilypon doubtless came from the long tunnel of Sejanus, which for the greater part of its length is cut through the compact, yellow volcanic tufa of the hill. Stone used for constructions near the sea, for the piers and sea-walls now under water, was, however, in all probability obtained from the huge cave-quarries in the cliffs of Trentaremi Bay.

The caves¹ are shown from various points of view in figs. 1, 86, 87, 88 and also in plan in the map at the end of the book. They extend far into the rock; some are close on 40 feet in height, and the floors of three of the oldest are at depths of 13 feet, 16 feet, and 19½ feet below the present water-level. According to a rough calculation 200,000 cubic feet of stone have been taken from them. From one of the caves a narrow artificial passage ascends to a chamber in the substructions of the terraces already described (p. 82), having passed right through the hill. It is not easy to scramble along.

¹ For a detailed description of the caves see *Earth Movements*, p. 34.

The Tavola di Mare.

After rounding the point we find a long flat reef in the middle of Trentaremi Bay which has been well named 'la Tavola di Mare'. It was a building site, numbered XXXIV in fig. 31. An entirely submerged *cuniculus* traverses the northern end; submerged walls cross the southern end, and the contour of the whole is trimmed square after the usual manner of seaside foundations.

Statue of St. Francis.

Gaiola Island.



Scuola di Virgilio (XXX g).

FIG. 89. GAIOLA CHANNEL. Looking East.

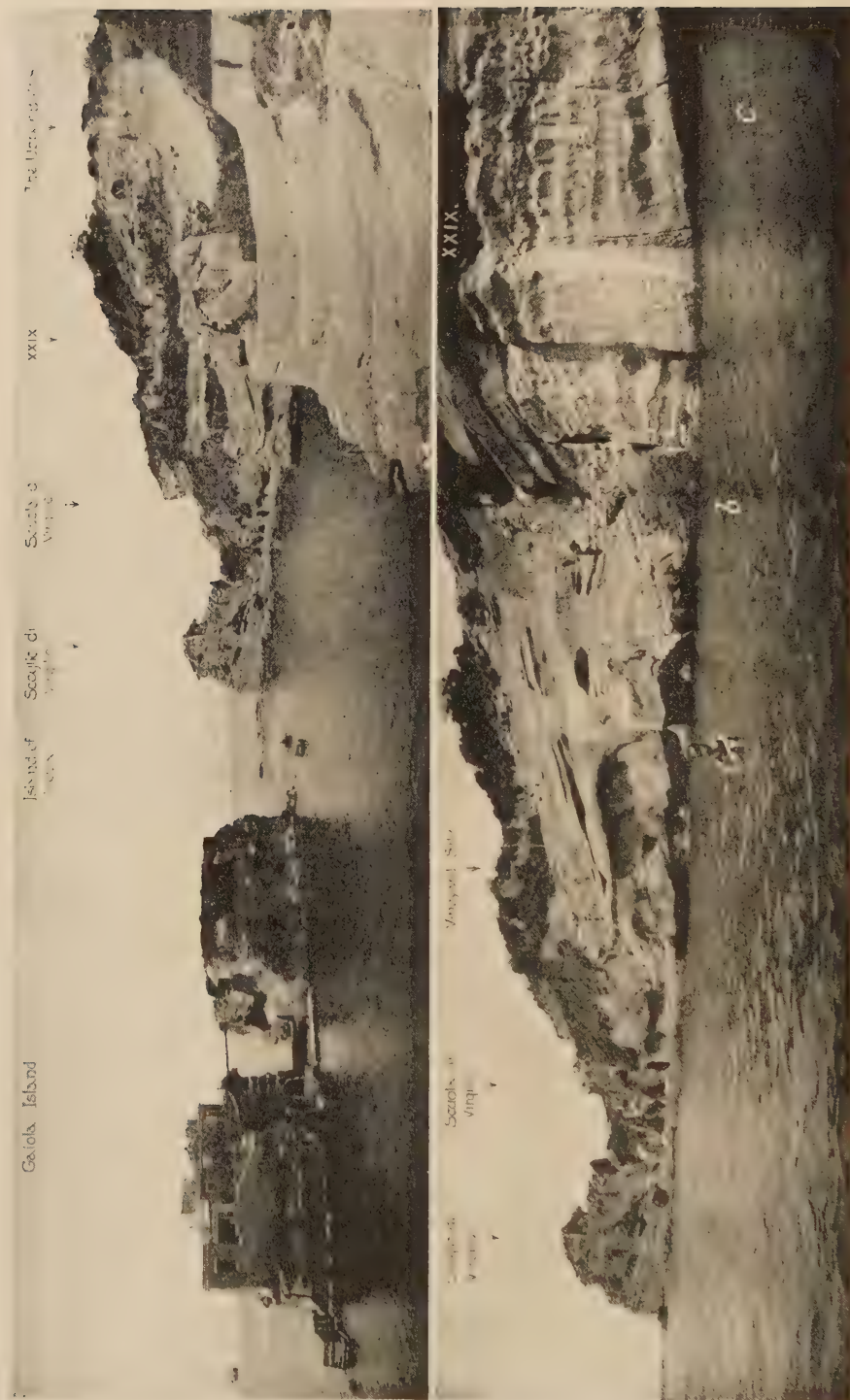
II. THE GAIOLA REGION

The lower end of the track down the Gaiola Valley debouches on to a narrow strip of beach dominated by a hill on either side, but open to seaward with a view extending to the Sorrentine hills. Had we in Roman times found ourselves on this spot the aspect would have been far different. The way would have been hemmed in by high buildings standing out from the two hill-sides, while in front the outlook would have been blocked by other edifices clustered round a harbour, and possibly only a glimpse of the sea would have been caught between them.

The first turning to the left bore eastward, leading to Naples by a road which skirted the shore. Along it to Marechiano, and beyond, stretched an almost uninterrupted series of Roman houses, harbour works, and other remains at so low a level as to completely demonstrate the subsidence of this part of the coast. And it is a matter of surprise that the exploration and description of the region should not have been undertaken long ago, especially when we remember that so great an authority on local antiquities as Maza lived at Marechiano.

Another road led south and, after passing the breakwater and other buildings of the harbour, emerged on the open shore by a large square building standing out from the hill-side and but a few yards from the sea. This building, no. XXVIII, or the 'House of St. Francis', faced south-east, commanding a fine view of the coast as far as the buildings of the Rosebery Region, which would have been seen advancing into the sea a mile away. Going round no. XXVIII the road turned suddenly to the right and ended in a cutting between high rocks, at the head of a small cove under the buildings of the 'Scuola di Virgilio'.

Buildings stood to right and left: on the right no. XXIX and the Baths on the Pausilypon hill, which have already been described; on the left the buildings nos. XXVI, XXVII, XXXI which clustered on the rocks, now the Gaiola Islands. They would appear to have been of considerable size and were reached by two side roads or paths, which branched off from the main road we have been following. It is



FIGS. 90 AND 91. THE GAIOLA CHANNEL.

impossible to determine the character of these 'side roads'; they would have been paved roads, bridle paths, or terrace walks according to the nature of the buildings to which they gave access.

The first road lay between houses XXVI and XXVII and led no doubt on to the great sea-wall which crosses the promontory at a few yards to the south, and which served the double purpose of a protection to the buildings and of a pier for going on board the boats. Whether a second road existed is not so clear; if so, it might have passed through the tunnel cut through the rock between the two larger islands, to the last vestige of which we have already drawn attention. The way would have lain between sites XXXI and XXVI, and then simply led to the water's edge.

Archaeologically we must ever regret that these roads and harbour works have sunk out of sight, but there are compensations: the water channel which has taken their place is a most perfect spot for a swim.

Building No. XXVIII.

The ruins of the first building beyond the harbour, 'the House of St. Francis,' are completely submerged, but the top of the walls, which rise up from a depth of two fathoms, comes so close to the surface as to be awash. The front of the building, 49 feet in length, faces south-east. The rock foundation has been cut away in line with the front and also with the north-east side, though at a slant to the south-west side. On its inner aspect the wall has been enormously strengthened by a construction of piers with semicircular niches between them, which now give the submerged ruin its peculiar appearance when seen over the side of a boat. The niches were formerly vaulted over: five are ranged along the south-east front, one in the north-east wall. In the complete building the piers may have supported columns; the ground-plan was square. A horizontal channel, about 6 feet deep, traverses the rock behind the fabric at a distance of 42 feet from the south-east face, and a similar channel, 60 feet long, may be seen in the flat submerged rocks 50 yards to the north.

We named this building after St. Francis because it lies at the foot of a wooden effigy of the fisherman's patron, and which until quite recently watched a tiny basket at the end of a rod into which those who had made a good catch placed a small offering in kind, as a mark of their gratitude to the saint who had smiled on their fishing (fig. 96). Such effigies are rare; we are not acquainted with any other

upon this coast, and we are tempted to see in this St. Francis a survival of a statue of some sea-god, perhaps Glaucus, Palemon, or of Neptune himself, who may have had a shrine here. For the sake of comparison we have reproduced a photograph of St. Francis looking at the sunken Isolotti di Gaiola (fig. 92), and a fresco of a sea-god near

Capri.



FIG. 92. STATUE OF S. FRANCESCO. Facing the Isolotti di Gaiola (Site XXVII).



FIG. 93. STATUE OF A SEASIDE DIVINITY. Near a group of buildings of rectangular ground-plan similar to that of the buildings which formerly stood on the Isolotti di Gaiola.

a square group of buildings such as may have stood upon them, which would of course have been on the south-east side of the roadway in Roman times (fig. 93). Our St. Francis may even be the harbour-god Portunus, whose shrine and harbour of Pausilypon have both sunk beneath the waves which in storms now dash against the pedestal of the god himself.

Round this building the road turned westward, passing along

a rock-wall artificially hewn straight, as if to make way for the road. The top of the rock is 2 or 3 feet under water, and the bottom of the channel is at least 5 feet deep. Beyond some steps and a slip-way in present use, the rocks become high, and show by their artificially cut ridges and flat surfaces that a building once stood against them. (No. XXIX)



FIG. 94. BUILDING NO. XXIX, BELOW MR. FOLEY'S HOUSE.

Building No. XXIX. The Northern House on the Gaiola Channel Road.

Two of the basement rooms, *b* and *c* (figs. 91 and 94), of this building opened on to the north side of the street: their ground-plan may be clearly seen under 6 to 10 feet of water, and it is still possible to make out the position of the entrances. Room *b* is nearly square, 26 feet by 29 feet, and its walls were divided into three panels by columns raised on plinths. There is a niche in the middle panel, as shown in plan in fig. 95.

The upper storeys over the submerged rooms have long since fallen away, but some walls of contiguous rooms and passages

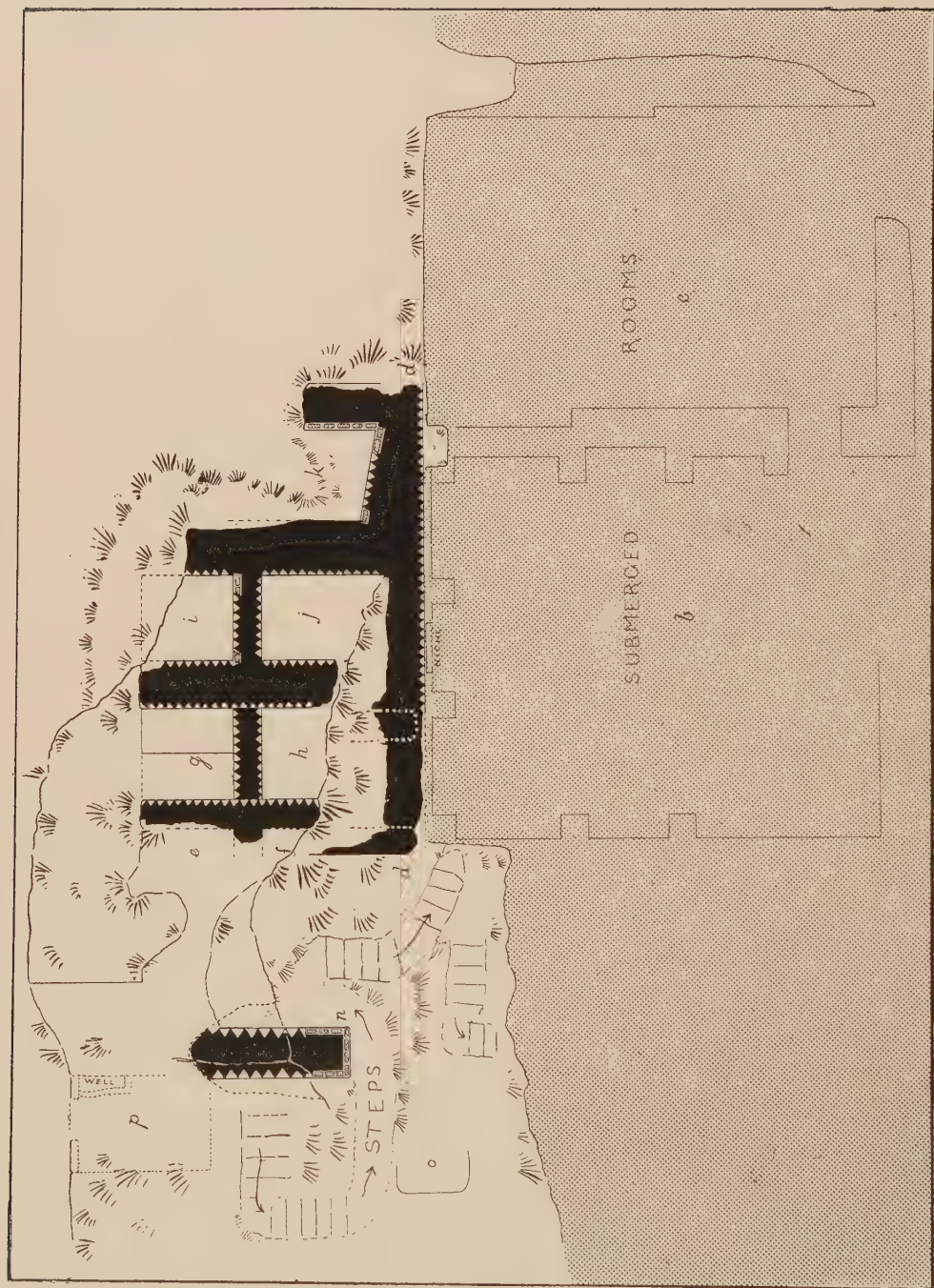


FIG. 95. PLAN OF BUILDING NO. XXIX.

belonging to an upper storey are to be seen on a tufa knoll overlooking the Gaiola Channel. There, behind the massive wall, *d* (fig. 94), at a height of about 40 feet above sea-level, are seven small chambers, *e-k*, shown in ground-plan in fig. 95. Their party-walls are faced with reticulate work. Two cistern-like chambers, *g* and *i*, on the north side, partly excavated in the tufa rock, are about 18 feet in depth; their walls are also reticulated, and are plastered and perforated at intervals by holes for floor joists. At the bottom of these chambers were found some slabs of a pavement of black marble (no. 6, p. 247), fragments of pottery, and quantities of moulded and painted plaster, both blue and yellow, green and red, and blue mosaic tesserae—an indication of the decoration of other rooms above. In places the angles of the walls are finished with tufa lateritium, laid in $4\frac{1}{2}$ -inch courses.

In the north side of the mound, at a height of 25 feet above sea-level, has been hewn a small chamber, *p*, with a well in one corner. From this chamber some rude steps lead down to the sea. At one point the fissured rock has been underpinned by a substantial buttress, *n*, faced with unusually large blocks of opus reticulatum, $4\frac{1}{2}$ inches square, worked into tufa lateritium also in $4\frac{1}{2}$ -inch courses. At a distance of a few feet to the west there is a shallow excavation in the tufa, *o*, plastered internally.

Building No. XXX. Scuola di Virgilio.

At the western end of the Gaiola Channel Road, and now standing on the water-line at the foot of the low cliffs, are the most extensive architectural remains in this region. Drawings of them in successive stages of decay have been published in several books, the best engraving being that of Paoli¹ (fig. 96), of which many inferior copies exist. Tradition associates the name of Virgil with the ruins. There he is said to have held his school; hence the name Scuola di Virgilio. But the early antiquaries, who saw in every partly submerged Roman building a Roman bath, attributed to the structure a different purpose. At the time of Virgil, however, the Scuola must have stood at least some 15 feet above the water, and there would have been a clear view east,—the view in fact which is shown in fig. 89, only in the foreground the spectator would have seen a road with buildings on either side instead of water.

What is left of the 'Scuola' shows that there was a square central

¹ Paoli, *Antiquitatum Puteolis Cumis Baiis existentium reliquiae*, 1768, pl. xi.



FIG. 96. SCUOLA DI VIRGILIO IN 1768 (after Paoli).



FIG. 97. SCUOLA DI VIRGILIO (XXX) IN 1894.
a Fluted pilasters and *b* Mosaic floor on the Scoglio di Virgilio. *c, d, e* Ruins of Scuola. *f* Cliff above Grotta dei Tuoni. *g* Masonry shown to left of fig. 89.
v Scoglio di Virgilio.



FIG. 98. SCUOLA DI VIRGILIO IN 1907.

hall, with a semicircular apse flanked by two niches in the western side. It was ceiled with a barrel-vault springing from the north and south walls which had fallen before 1750. A large part of the south wall was standing in 1894, when I first photographed the ruins, but this too had fallen before 1907. A low and narrow passage led between the central chamber and the rock as is shown in the inset plan, fig. 96. The floor of the hall is surrounded by a channel.

The eastern edge of the partially submerged ledge of rock on which the Scuola stands, rises from 3 to 4 fathoms of water: it has been trimmed straight, and there are vestiges of walls upon it. A wall in the middle of the channel may have supported a bridge giving access to the building we have named the Southern House of the Channel.

There are ruined passages and small apartments with reticulated walls on an upper floor, but it is difficult to make out much from such a wreck of masonry and concrete (fig. 98).



FIG. 99. THE *caveola* THROUGH THE GAIOLA ISLAND AS IT APPEARED EARLY IN THE NINETEENTH CENTURY.

A submerged cuniculus which passes under the floor of an old stone-pit on the west side of the ridge perhaps communicates with other submerged channels under the Scuola.

Building No. XXXI.

Three buildings stood in line along the south side of the street, where the Gaiola Channel now is. They were separated by two roadways leading to other buildings further south. The westernmost way passed through an artificial tunnel cut through the tufa rock. One cut through the Badessa Rock is similar. The greater part of the roof of this tunnel has been demolished by the sea, perhaps during the Middle Ages when the land was at the lowest point of submergence, but a vestige was standing as a rocky arch early in the nineteenth century. If we allow that the name Gaiola has been derived from *caveola*, it is possible that this tunnel was the *caveola* to which the place-name referred.

But little is left of the three buildings. A large piece of reticulate

masonry still adhering to the rock of the western island is all that there is above water to attract the attention of a casual observer: on the sea-bottom on a calm day the foundations clearly show the extent of the buildings. Facing the Northern House over the way is a square foundation, with an entrance on the west, from which steps appear to have led down to the water's edge.

The Upper Baths



FIG. 100. THE EASTERN CAVES OF THE GAIOLA ISLAND FROM THE SOUTHERN ISOLOTTO.

Building No. XXVI. The Eastern Caves.

Foundations of a middle building are also outlined on the sea-bottom, but are discontinuous. They reach the surface under a short modern sea-wall at the north-east corner of the island. Two caves (fig. 100) and a submerged wall in front of them (no. XXVI) apparently formed part of the same edifice. The vaults of the caves are barrel-shaped; their sides were covered with stucco. Although the floors of both are submerged to over a fathom, yet various details show that they must have been above water when they were constructed. In the southernmost cave, 6 feet below the surface, a ledge rather less than a yard wide runs along either side; at the west end these ledges rise by three steps to a transverse raised platform, the top of which is now about 4 feet under water. In the north side is a submerged niche,

3 feet long by 8 inches deep. To the west side a passage leads right through the rock into the above-mentioned tunnel between the two Gaiola rocks; it is 6 feet high, and quite 10 yards long, and is now completely flooded, the top being quite 18 inches below the surface.

The northern cave, having been less exposed to the elements than the southern, retains more original plaster on the walls. We observed that here, as elsewhere on this coast, little or no erosion has taken place below the reach of the waves.



FIG. 101. THE NORTHERN ISOLOTTI DI GAIOLA.

Building No. XXVII. On the Isolotti di Gaiola.

Constructions XXXI and XXVI may have been part of one and the same edifice, but no. XXVII, built around and on two rocky hillocks, now two weather-beaten rocks known as the Isolotti di Gaiola, may well have been a separate structure. It is a rectangular building, a corner house in the angle between the Gaiola Channel Road and the side road which ran south. The north wall is in deep water and is in a good state of preservation. Beyond it, the water is 16 feet deep; inside, 12 feet or less. The complex construction of the inner face, with its niches, angles, corners, and buttresses, makes any supposition of its having been built under water absurd. It cannot, however, have been very high above the water-level. The main

entrance to the building seems to have been from the side road, where an archway opened into a passage whence stairs doubtless led to the higher floors. The arch, now some way below the surface, leads to the retreats of octopi, and through it throng the fattest grey mullet we have seen in these waters.

The upper floor has all gone, with the exception of a cutting in the northernmost Isolotto, which still retains bits of plastering on the walls and from which a passage 4 feet high by 3 feet broad leads south. This passage is clearly shown near the left-hand side of our illustration of the northern Isolotto (fig. 101).

The picture which comes nearest to our idea of what the buildings on the Isolotti may have looked like is shown in fig. 93.

Dry land apparently extended for quite fifty yards to the east of the Isolotti building, for there is at that distance a foundation, rising in steps, like the one depicted in the fresco of Daedalus and Icarus in the British Museum; but it is of course also possible that it may have stood out in the sea like one of the foundations of the many little seaside temples which were so favourite a subject in wall-paintings of the Pompeian epoch.

Building No. XXXII.

The roadway between nos. XXVI and XXVII led to a building no. XXXII, with a strong buttress, pointing to the former existence of a weighty superstructure at the southern angle. There are five or six small rooms on the ground floor, and near by, a small cave hollowed out of the solid rock to a depth of at least 12 feet.

At 25 yards westward a rectangular pier of concrete rises from water of such a depth that it is highly probable that the pier was just beyond the ancient shore-line. It may have supported a little temple or pavilion standing out in the sea.

The Sea-Wall.

The situation of these buildings was more than usually exposed to the sea. Waves sweeping over the shelving rocks that bounded the Gaiola promontory would have dashed with destructive impact against low-lying buildings, had they not been sheltered by a sea-wall. The old sea-wall, about 50 yards distant from the nearest buildings, is now submerged to a depth varying from 6 to 10 feet. The south-western end is greatly strengthened by a huge mass of concrete

and rock, the *Scoglio traverso* of the Italian charts. The top of the *scoglio* is now just awash and would have risen high above the sea at the time when it was built. In their arrangement the sea-wall and buildings must have closely resembled those shown in the fresco depicted in *Roux aîné*, vol. iii, pl. 28.

The construction of the wall indicates that in part it was originally a row of separate concrete piers, like those of the breakwater of Pausilypon harbour, and that later a continuous barrier was formed by filling in the gaps.

We believe that the whole area within the sea-wall was dry land in the Roman period, and that there were many rocks showing above water to the south of it, for at the present time shoals there extend for about 270 yards and have only about 16 feet of water above them. We find many rocks presenting in their straight-cut edges traces of the handiwork of man. About a quarter of a mile from the island is the Cavallara Shoal, but these rocks although at the same depth as those of the other shoals, and therefore in Roman times level with, if not well above the surface, show no signs of having been quarried or built upon.

THE HARBOUR OF PAUSILYPON

EXTENDING in line parallel to the shore, and distant some 80 yards from it, are structures which local fishermen from time immemorial have regarded with mixed feelings. For in stormy weather they are natural dangers to be given a wide berth, yet in calm weather they form a happy hunting-ground for *frutti di mare*. Over those nearest to the surface there is less than 18 inches of water, but others are two fathoms below.

On examination it is easy to see that these *chiane* or shoal rocks are arranged in a row in line with, and at the further extremity of, some submerged ruins nearer the shore, that they are square in section, and that they rise from deep water at nearly equal intervals. They are obviously artificial; and by their situation, number, and linear arrangement remind us of the protective breakwaters, or *opus pilarum*, of the ancient harbours of Puteoli, Misenum, and Nisida.¹ The piers are all shown in fig. 103, and the top of one of them may be seen near the right-hand margin of fig. 102.

Wherever there was a possibility of an artificial harbour becoming silted up with sand borne along by the littoral drift, the Campanians avoided continuous sea-walls and constructed interrupted barriers of separate piers rising from the bottom to the surface of the water. Currents could thus freely circulate around the bases of the piers and sweep the passages clear of deposits of mud or sand which in the course of time might accumulate to such an extent as to choke up a closed harbour.

It is more than likely that this method of breakwater construction was introduced into Campania, together with so many other arts and customs, by the Greeks. At Delos and at Eleusis there are said to be moles built upon this plan.

The disadvantage of a continuous sea-wall as a harbour defence on this shore has been well exemplified by the case of the late Mr. George Rendel's harbour at Maraval, which becomes silted up

¹ Fazio, *Intorno al miglior modo di costruire i porti*; Günther, in *Geographical Journal*, 1903, 269-75.



FIG. 102. PANORAMIC VIEW OF THE SHORE OF THE SUNKEN HARBOUR OF PAUSILYPON.

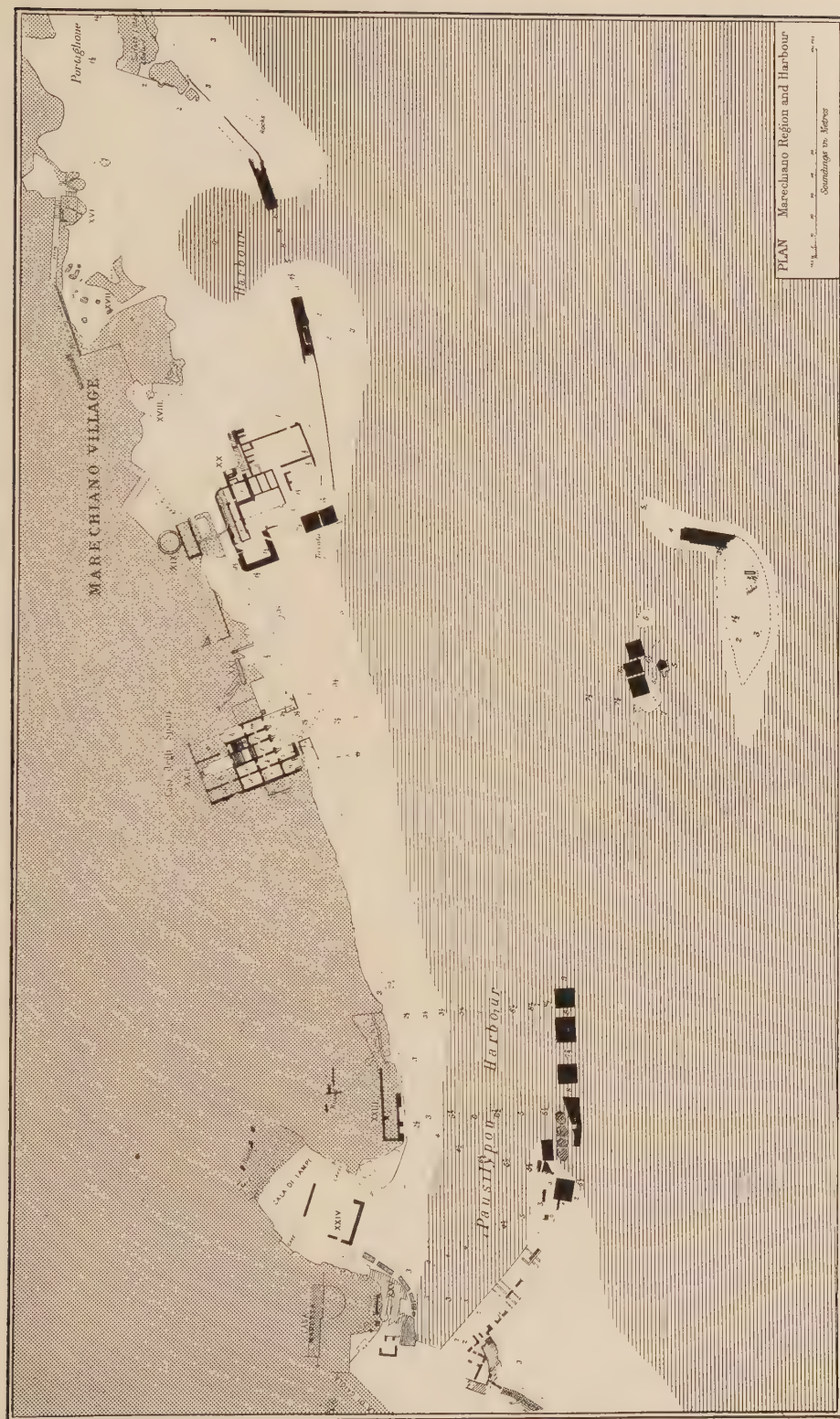


FIG. 103. PLAN OF PAUSILYPON HARBOUR, CASA DEGLI SPIRITI, AND OF THE MARECHIANO HARBOUR.
The Roman foreshore which is now submerged is shown in white.

quickly and requires dredging every few years. The Roman plan has been so efficacious at Pausilypon that the water within the outermost piers is still 26 to 30 feet deep. Such a breakwater was spoken of as



FIG. 104. A ROMAN HARBOUR, AFTER A FRESCO FOUND AT GRAGNANO.

an *opus pilarum*. The tops of the piers were sometimes connected by arches of concrete, forming a *progressus*,¹ as at Puteoli in the case of the Bridge of Caligula, or in a harbour represented in a fresco unearthed at Gragnano² (fig. 104), or again in another harbour

¹ Vitruvius, v. 12.

² *Le Pitture antiche d'Ercolano*, ii. 295.

modelled on a Roman lamp, fig. 105. In the last case the *progressus* is carried on eight piers and ends in a kind of triumphal arch. A goat-herd is driving his goat landwards, and two ducks are swimming on the water below. Except for the larger number of piers, the whole scene might have been a truthful delineation of Pausilypon Harbour.



FIG. 105. ROMAN LAMP, DECORATED WITH A VIEW OF AN ANCIENT HARBOUR.¹

We were not able to distinguish any of those stone mooring-rings which Fazio found on the piers of the harbours of Nisida and Puteoli, and which may have suggested the stone rings to receive the masts of the *velaria* of theatres.

The Pausilypon harbour was well sheltered by land on the west and north, the piers protected it on the south, and the entrance

¹ Photographed from Lamp No. 758 in the British Museum by the kind permission of Mr. A. H. Smith.

faced east. But no doubt further protection was afforded by certain structures and reefs shown in fig. 103.

Opposite the Casa degli Spiriti, and some 200 yards distant from the shore, a shoal is marked upon the Admiralty charts, which on closer inspection we found to be a group of four concrete piers. The three inner piers are rectangular, 12 feet in height, and rise to within 13 feet from the surface: the middle one bears traces of a superstructure which rises to within 8 feet of the surface. The piers are 5 yards square and they are about 1 yard apart. Some large blocks of stone, perhaps the masonry débris of a superstructure, lie at their foot. Outside, the fourth pier, less regular in shape, rises to within 8 feet of the surface from a depth of 16 or 20 feet. A good idea of the original appearance of these piers is given by a mural painting in the House of Lucretius in Pompeii (Niccolini, pl. iii). There the artist has represented a woman fishing from just such a group of piers as these must have been.

Further out still, a long crescent-shaped rock stood high out of the water. Its north-eastern end is continued as a broad sea-wall, pointing towards the 'fish-tanks' at Marechiano. The highest point, near the middle of the shoal, now 5 feet below the surface, has been carved out in a rather peculiar manner, to the resemblance of a tomb 12 feet long, which is girt about seawards by an irregular semicircle of round holes placed about 2 feet apart. An explanation of them is that they formed part of the foundation of a superstructure which has been washed away. It is possible that a lighthouse to show the entrance to the Pausilypon or Marechiano harbours once stood upon this shoal, then a rock well above water, just as the *Lanterna* marked the entrance to the Julian harbour. If this were the case, it might have been from this lighthouse that the village church of Marechiano took its name of del Faro.

The Harbour Buildings.

At the head of the harbour and in line with the breakwater are the lower portions of walls of certain small chambers built inside a curved wall, in the form of an arc of a circle, 20 yards in radius. It is conceivable that the structure was used as a magazine.

The coast road to Neapolis would have passed along the north side of the harbour and in front of three buildings, of which traces are still to be seen on the cliffs and under water.

Buildings Nos. XXV, XXIV. Marotta and Lampi Houses.

The first of the buildings, no. XXV, at the turn of the road, was built against the cliff on which the Casa Marotta now stands, but lower down than the modern house. Here there is part of the floor of opus signinum of a room on the second storey, though now only 10 feet above the sea: large blocks of concrete lie in the shallow water below (fig. 106 *b*).

A second building (XXIV) stood further back, in the little cove of the Cala di Lampi (fig. 106, *c*). Its submerged walls indicate that the cove as we now know it did not exist in Roman times, but that the bottom was dry and was built over.



FIG. 106. SITE OF PAUSILYPON HARBOUR.

The Roman breakwater lies submerged at k.

- | | |
|--|--|
| <i>a</i> Cala di Gaiola. | <i>f</i> Upper storey of Casa degli Spiriti. |
| <i>b</i> Submerged ruins (XXV) under Marotta Headland. | <i>g</i> Malatesta Headland. |
| <i>c</i> Cala di Lampi (Site XXIV). | <i>h</i> Casa Marotta. |
| <i>d</i> Cave. | <i>i</i> Tower of S. Maria del Faro. |
| <i>e</i> House of the Three Buttresses (XXIII). | <i>k</i> Breakwater (submerged). |

Two shallow caves about 10 feet in height have been hewn in the rock one to the east, the other to the west of the house. These caves are now flooded (fig. 106, *d*). In plan it therefore resembled several other Roman seaside houses. A cave, partly hewn out of the rock, formed an annexe to the Casa degli Spiriti; and the house of Servilius Vatia at Torregaveta was provided with two caves which were sufficiently noteworthy to be described by Seneca.

A rectangular excavation has been cut in a submerged ledge of rock near the eastern cave.



FIG. 107. SITE OF THE HOUSE WITH THE THREE BUTTRESSES (XXIII).

Building No. XXIII. House with the Three Buttresses.

Just beyond the Cala di Lampi and above water are the remains of an extensive building, no. XXIII, which we have called the House with the Three Buttresses from the supports in front of the house, which are a conspicuous feature against the rock, when seen from the sea. The house would have stood about 30 feet above the Roman sea-level.

A narrow winding passage, 6 feet high by 2 feet broad and dipping from west to east, is tunnelled in the rock under the house. The bottom of the passage is 3 feet above water at the eastern end of the ruins, but it slopes eastward with so steep a gradient that it soon becomes half submerged, and at the termination nearer the Casa degli Spiriti the entire passage is filled with water. It ends quite 7 yards from the present shore, having traversed the ledge of rocks, now submerged, on which the ancient coast road to Neapolis was laid.

The purpose of this *cuniculus* was a great puzzle to us at first. Originally it must have been well above water-level, for it could not otherwise have been hewn through the rock: it therefore affords convincing proof of subsidence of the land. We at first thought it unlikely that so large a tunnel would have been cut as a drain, and believed it to have been intended as a private entrance to the house from the sea; but taking into consideration the large quantities of running water which the Romans were in the habit of using, and which the conduit of Serino put at their disposal, with the fact that the dimensions of this *cuniculus* are practically those of ordinary subterranean aqueducts, it seems probable that this passage was used as a drain or water-channel.

Marotta Reservoir.

On the top of the ridge, between the Gaiola and Lampi valleys and at a distance of some 60 yards behind the Casa Marotta, is an extensive building, roughly indicated in ground-plan in fig. 108, which appears to have served, at any rate in part, as a water reservoir. The main walls, which are 3 feet thick, extend for over 50 yards in a north and south direction and are faced with reticulate work. The two larger chambers A and B communicate by small pointed-arched apertures which reminded us of the similar openings between the two water reservoirs already described (p. 127), and would therefore seem to indicate a similar use. A line of putlog holes will be noted in the side walls of chamber B.

The site has already been rummaged by antiquity hunters, and the statue of the bearded Dionysus (p. 258) and many other treasures were found near here, but still a systematic survey of both this structure and of the many other buried walls could not fail to yield valuable results. Walls of importance were noted 20 yards to the west and 40 yards north beyond a hedge, and there are other important ruins in this valley that deserve investigation.

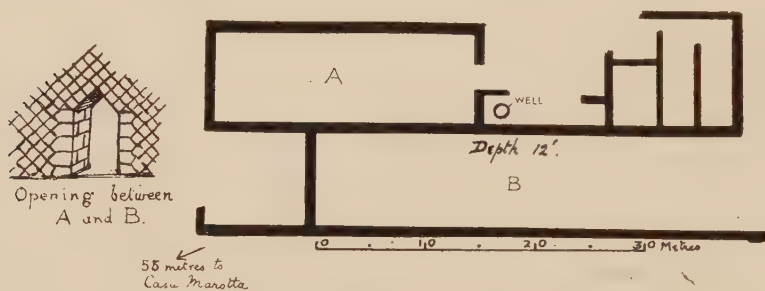


FIG. 108. WATER RESERVOIR NEAR CASA MAROTTA.

III. THE MARECHIANO REGION

Building No. XXII. The Casa degli Spiriti.

The Casa degli Spiriti is the most perfectly preserved Roman house on Posilipo. It stands in front of a pozzolana quarry, and being remote from any road can only be visited by sea. It is of interest to note that Sir Walter Scott was taken to inspect its ruins on January 26, 1832, by Sir W. Gell, and we borrow our preliminary description from one of his contemporaries¹: 'A story existed that out of an



FIG. 109. CASA DEGLI SPIRITI.

opening in the floor of one of the rooms in this villa a spectre robed in white occasionally appeared, whence the place had acquired the name of La Casa degli Spiriti, and none had presumed to inhabit it. The fact was that a third storey had been built upon the Roman ruins, and this being only inhabited by paupers had fallen into decay, so as to endanger one angle of the fabric, and the police, for fear of accident, had ordered that it should remain untenanted. (The house is situated upon a rock projecting into the sea, but attached on one side to the mainland.²) An entrance for a boat has been left in the basement storey, and it is probable that a sort of open court, into which the sea

¹ Essay by Mr. M. Hamilton, in *Transactions of the Royal Society of Literature*, 1837.

² An inaccurate description.

enters at the back of the house, and in which is the staircase, was constructed for the purpose of cooling the apartments in the heat of the summer, by means of the perpetual heaving and sinking of the ocean, which takes place even in the calmest weather. The staircase was too much ruined for Sir Walter to ascend with safety, but he appeared satisfied with what he saw, and took some interest in the proofs which the appearance of the opus reticulatum, high up in the external walls, afforded of the antiquity of the place.'

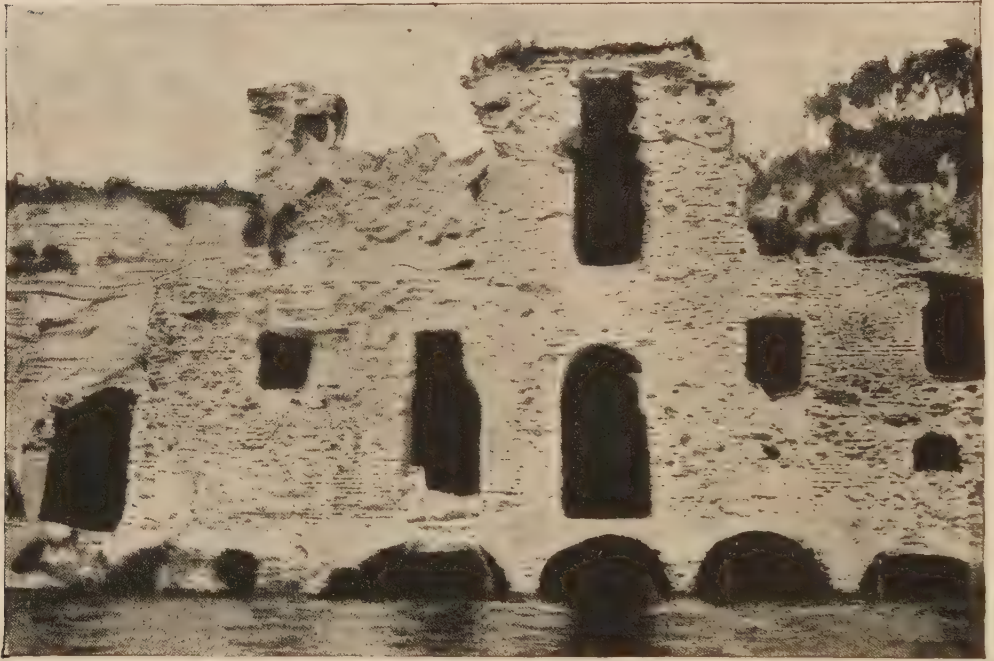


FIG. 110. CASA DEGLI SPIRITI (XXII).

We cannot, of course, accept the ingenious explanation for the presence of water in the lower storey, because we have convincing proof of the subsidence of the building in the fact that ancient plaster, such as is only applied as a covering to dry walls, still adheres to the basement walls below the water. In front of the house and completely submerged is a terrace, with a flight of steps, which must have once been above water.

The heads of the doorways and windows on the first floor were originally semicircular, but in later times they were filled up with rough rubble masonry, and smaller square-headed apertures were cut through the old arches (fig. 110).

From these alterations we learn that an attempt was made to render the ancient building serviceable under new conditions. Evidently the first-floor rooms, having been carried down close to the water, were liable to be swamped by heavy seas: the inmates therefore blocked up the lower parts of the windows.

The water being from 6 feet to 8 feet in depth over the basement, the ground-floor rooms must be visited by boat. Facing the sea are four rooms, two on either side of a passage leading through the house into a court behind, now open to the sky. These rooms all open on to an 'area', which has been cut out of the rock down to the level of the basement; it is also submerged. On the south-west side a small flight of steps or incline leads to an upper terrace on that side, and perhaps there was a corresponding flight leading to

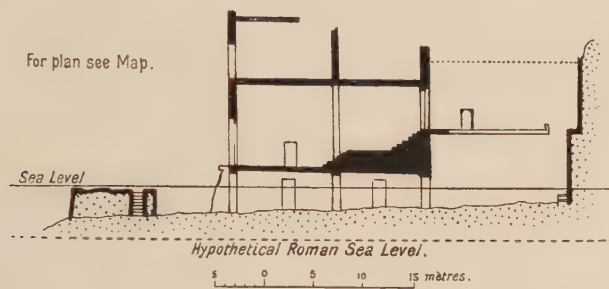


FIG. III. CASA DEGLI SPIRITI, IN SECTIONAL ELEVATION.

the terrace on the east side of the house, but this has been washed away. The middle of the area is crossed by a channel, perhaps a drain.

On the first floor the plan of the basement is followed: a central hall and staircase, with two front rooms on either side. One room has no window. In the other three the windows have been altered in the manner already described.

The balcony, which once connected the two side terraces and gave access to the central doorway, to judge by the scanty remnant, seems of post-Roman date, but in all probability it replaced a more ancient one. At the western side of the house is a cave, partly hewn in the tufa, partly covered in with masonry. At the back of the building there were apparently three covered courts, the roof of which reached back to the cliff behind, as shown in section in fig. III.

The upper storey, like the balcony, is of post-Roman work.

Another chapter in the remarkable history of this house is indicated by the line of erosion which runs all round the house,



FIG. 112. MARECHIANO HARBOUR, WITH 'POLLIO'S FISHPONDS' IN THE FOREGROUND.



FIG. 113. THE OLD BATHS ON THE BEACH AT MARECHIANO.

but which may be most clearly seen on the opus reticulatum inside the easternmost room, at a height of 16 feet above sea-level. This shows that the house has been 16 feet *lower* than it is now.

I have learnt the more recent history of the house from my friend Count L. de la Ville sur Yllon, who informs me that it was known by the name of Casa degli Spiriti as long ago as 1599, when it was in the possession of D. Ortensio del Pezzo. It passed by inheritance to the Prince di Santo Pio, his descendant. The vaults below used to be known as the 'Grotte delle Fate'. In Carletti's large map of 1775, the house is named Casa di Fiorello and at about the same time it was used as a tavern, a favourite resort for water-parties; it is very likely that the upper portions of the building were restored for this purpose.

Further west the rocky foreshore has been cut away to form a low platform, upon which foundations are traceable.

Building No. XIX. The Baths (= 'Pollio's Fish-Tanks').

At one end of the fishermen's beach is an ancient building in a remarkable state of preservation considering its exposed position on the edge of the water. Two adjoining rooms, one circular and the other rectangular, have retained their vaults, to the great benefit of the fishermen who for generations have found them a convenient store: inside they keep their crab and *purpe* pots, on the flat roofs they spread their nets to dry.

In their form and arrangement the rooms are very like the two principal rooms of baths called the 'Tempio di Mercurio' at Baia, and they probably served a similar purpose. The rectangular building, 10 feet wide by some 50 feet in length, is divided into two rooms, 23 feet by 10 feet, by a transverse wall. This is partly cut out of the rock, partly built of reticulate-faced concrete. Against the north wall a narrow flight of thirteen steps formed of large bricks (*bipedales*) leads to an upper storey, now gone. Near them may be seen tufa lateritium work covered with opus signinum. The floor of the rectangular building is about 6 feet above the present sea-level that of the circular room being some 3 feet lower.

Contiguous, and probably part of the same structure, are the important ruins (xx) within the harbour of Marechiano which have been associated with the name of Vedius Pollio, and which are commonly explained as ancient fish-stews. The local traditions

about Pollio, however, may not be more reliable than those about Virgil, and so the identification of his fish-tanks must be received with caution. On the other hand, the evidence afforded by adjacent submerged structures shows that it is quite certain that these so-called fish-ponds, when built, must have been so high above the sea-level that they would have had to be supplied with water by artificial means. This alternative is so improbable that we cannot but believe that this composite structure is part of the lower floor of a house which originally stood above the sea, but subsequently sank low enough for later generations to adapt its rooms to pisciculture. The ground-plan is not an uncommon one for a Roman house, and

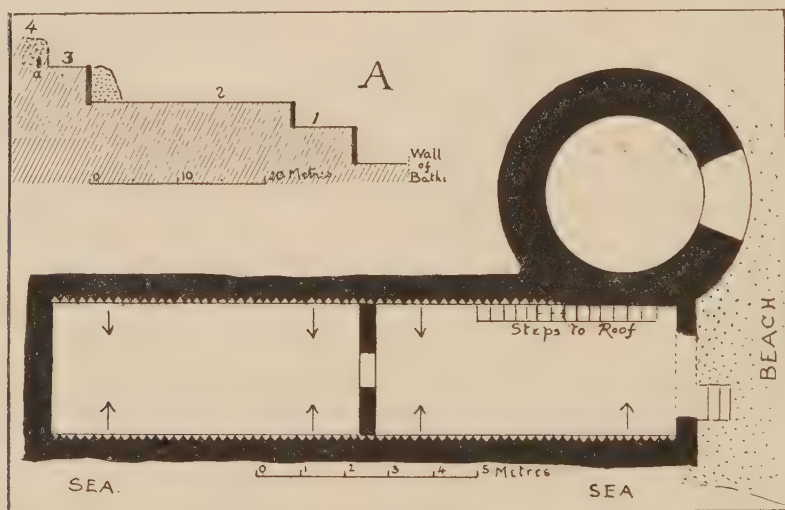


FIG. 114. PLAN OF BATHS AT MARECHIANO.
A. Section of Hill-side behind the Baths.

consists of numbers of small rooms grouped round a court. A plan of the submerged rooms as they are now is given in fig. 103. The restoration which has been attempted by Mazois,¹ seems to us to have been prepared from erroneous measurements and on the supposition that the house was originally symmetrical, which does not appear to have been the case.

In stormy weather both this site and that of the Casa degli Spiriti would have derived considerable protection from the large shoal and artificial piers at the entrance to Pausilypon Harbour.

¹ Mazois, *Les Ruines de Pompéi*, Paris, 1838.

Sites XVIII-XVI.

Further west, the rocks under the village show many traces of ancient work. A flooded cave (XVIII) with two entrances marks the site of a building. Many fragments of masonry lie in the sea below the old retaining wall (XVII); and further east, at the foot of the old descent leading down from the village to the sea, are some remarkable channels cut in the rock which originally belonged to an ancient building (XVI), of which traces are discernible, and have doubtless served the purpose of fish nurseries in more recent times. The site is marked by the two boats and the curious V-shaped rock in fig. 115.



FIG. 115. SITE XVI.

The Harbour of Marechiano.

On a calm day the limits of the harbour of Marechiano are not easily discernible, for the outer rocks and walls of concrete are submerged, but when the sea is rough, a curved line of surf marks their position. Like a fringing coral reef these harbour defences enclose a pool of tranquil water. On the south and west the enclosure is completed by ancient moles. The east barrier, about 16 feet wide and 55 yards long, has been partly built upon, partly shaped out of a reef of tufa running out from the Cala di Punta Nera. On the other side of the entrance, 38 yards in width and 26 feet at its deepest part, is the west barrier, which starts from a flat rectangular mass, either of rock or of concrete, known as *la Tavola*, just off the south-west corner of 'Pollio's fish-tanks'.

With the land at the Roman level, the water within the barrier would have been very limited both in depth and extent, but there would still have been over a fathom at the entrance. Owing to the fact that the harbour defences are continuous instead of being an interrupted *opus pilarum*, as is more usual on the Campanian coast, the harbour has become silted up to a considerable extent.

It is interesting to find that the barrier is of almost exactly the same width as that of the Greek harbour at Modon, as described by Blouet,¹ viz. five metres, but we are not prepared to give any reason for believing that the continuous type of mole construction was more ancient than the interrupted type, of which we have discovered a good example in the harbour of Pausilypon.

At the Roman land-level the top of the sea-wall would have been high above water, like the sea-wall depicted in the fresco² shown in fig. 121.

¹ *Expédition scientifique de Morée*, vol. ii, pl. 15, figs. 2 and 3.

² Roux aîné, vol. iii, pl. 13.

Sites in Marechiano Village.

In the little village of Marechiano on the top of the cliff are considerable remains of Roman buildings.

Just behind the 'Baths' on the beach, four terraces rise one above the other, each being supported by massive retaining walls in which the reticulate tufa-facing is frequently conspicuous (fig. 114, A). The lowest wall rises from the shingle of the beach to a height of some dozen feet and supports terrace No. i, about 24 feet in width.

A buttress at the west end of this terrace indicates the site of a small building, for here upon the plastered wall is the impression of a stairway with sloping steps. Some traces of colour remaining on the walls show that yellow was the ground colour of the upper part of the wall, red the colour of the steps, the two being separated by a bead moulding coloured red, green, yellow and black.

Terrace No. ii is 9 feet above No. i, and is 75 feet wide. It is on the level of the *piano nobile* of the house that formerly belonged to the antiquary Maza, and along it extends a well-watered orchard and vine pergola, near which a mosaic floor of large cubes was found. A series of vaults, like those on the east slopes of the Gaiola, formerly supported the third terrace, 12 feet higher, and above this again are more walls in which an ancient aqueduct (*a*) may be seen. All these walls lie parallel to one another and to the coast-line.

Many fragments of sculpture and other antiquities have from time to time been unearthed in the village and its vicinity. A few of those collected by Maza may still be seen in the garden of his house, and are enumerated in the catalogue at the end of the book.

The Pharos.

Behind the village the picturesque bell-tower of the little rococo church of S. Maria del Faro is a conspicuous landmark.¹ According to a tradition it occupies the site of the ancient lighthouse from which the local Virgin has taken her name, and the many bits of Roman walls show that it has not been founded upon any new site. Certain ancient charters prove that the name of the church is at least as old as the days of King Robert. We read in one document: 'petia una terra sita in villa Posilipi, in loco ubi dicitur

¹ *Collina di Posilipo*, pl. 26.

S. Maria de Faro.’¹ And in another: ‘S. Stratum seu ad Sanctam Mariam dellu faru, seu ad marum planum.’²

We have therefore no hesitation in agreeing with Fabio Giordano³ in his belief that the church was called after an ancient lighthouse; but we do not consider it proved that the sites of church and lighthouse were identical or even adjacent. A light placed up on the hill at night might indeed show the mariner where the village was, but it would not be a safe guide for steering between rocks at the narrow entrance of the harbour down below. It is far more probable that the original pharus was situated near the harbour mouth upon one of the reefs which, though now submerged, was then dry. For that was the position of the pharus of other Roman harbours and also of the celebrated pharus of Alexandria. When the rocks sank so as to render that position impossible, the light would have been moved inland, and in this way the church of S. Maria del Faro may have come by its name.

The Temple of Fortune.

It may be doubted whether Maza’s identification of the ruins in the village of Marechiano as those of the Temple of Fortune is a correct one. Capaccio and other authors place the Temple of Fortune further east at the Capo di Posilipo, where there actually was a church called San Pietro or S. Maria Fortuna, and this has been confused by Giustiniani⁴ and other writers, who assume it to have been identical with the S. Maria del Faro. A third view is that of Giordano,⁵ who puts the Temple of Fortune at St. Agnello.

It is referred to in an inscription :

VESORIVS ZELOIVS
POST ASSIGNATIONEM AEDIS FORTVNAE
SIGNVM PANTHEVM
SVA PECVNIA D . D .

There is not much left nowadays to dispute about, and the ruins of the Temple, if such they be, are situated at the top of the path leading up from the beach of Marechiano, and are crossed by the present roadway.

¹ Giustiniano, *Regist.* 1317, C. fol. 211.

² Chiarito, *Commento sulla costituzione di Federico II*, par. 3, p. 2, pg. 173.

³ ‘Pharus quoque turris, qua accensis noctu lampadibus navigantes itineris admonerentur, in cuius reliquiis sacellum B. Mariae conditum phari nomen accepit.’ (Fabio Giordano MS.)

⁴ *Geografia del Regno.*

⁵ Giordano (chap. 22 de templis).

Here on a plinth of opus lateritium rest two blocks of piperno, about 5 feet apart, the supports of two fine fluted Corinthian columns of cipolline marble, 2 ft. 9 in. in diameter. Unfortunately only the base and part of one shaft is now to be seen. The wall behind is apse-like, suggesting the middle of the building.



FIG. 116. THE TEMPLE OF FORTUNE.

Water Supply.

The buildings of the Marechiano region were probably supplied with water by a branch conduit from the main Posilipan aqueduct. The requirements of the ancient population are to some extent indicated by the fine reservoir which is still in a good state of preservation beneath a large farm-house in the village. It measures 70 feet long by 20 feet wide by 20 feet deep, and its capacity would have been about 174,000 gallons. When we last saw it, it was being used as a barn for fodder.

If the identification of the 'old house' on the beach as part of a bathing establishment be correct, it is highly probable that the large reservoir supplied the baths. It is situate just above them.

Site XV.

The point on the west of the Cala di Punta Nera is neither as high nor as prominent as the one on the east, but it is prolonged seaward for a considerable distance as a long low reef, sheltering the Portiglione. These low rocks bear many traces of ancient workmanship.

Near the cliffs is a round vertical hole (XV), like the shaft of a well, close on 5 feet in diameter, and with water at the bottom: leading out of it are two horizontal tunnels which at present are half-submerged, the eastern one being 3 feet below water and $1\frac{1}{2}$ feet above water, and the western, which is 6 feet high, being half in and half out of the water. The eastern tunnel is in connexion with an artificial channel cut across the surface of some submerged rocks to the south-east.

Evidence is lacking which would enable us to assert positively the purpose of these tunnels and channel; in their general proportions they resemble the *cuniculi* which have been described in many ancient sites, and they are similar to the submerged rock-hewn passages in Trentaremi Bay and near Casa Marotta.

We cannot assert that every *cuniculus* indicates the former presence of a Roman house, yet most of them do, for *cuniculi* were hollowed out in the rock under the foundations, and were naturally the last part to disappear. In some places these rock-hewn passages are entirely submerged, in others they are not so, and when they are only partially filled with water, they are frequently used by fishermen as live boxes for their fish.

For instance, the channels which conduct fresh sea-water into the Peschiera of Villa Emma¹ (VIII) may partly be the submerged *cuniculi* of a house which has now disappeared, a speculation which receives some support from an eighteenth-century engraving² showing ruins standing in the water upon the rocky ledge traversed by the channels. The ruins were probably demolished when a sea-wall of lava ashlar and a *peschiera* were constructed near them.

¹ Casa Cannonate.

² By A. Cardon, after a drawing by Braçci.

Roadway and Buildings between the Marechiano and Rosebery Regions.

Between the Marechiano and Rosebery Regions no conspicuous ruins of Roman buildings have remained, but any traces that we have been able to discern will now be described in topographical sequence.

At intervals the line of the old coast road is clearly to be distinguished. For instance, within the Cala di Punta Nera there is a cutting between the cliff and a large rock suggesting that the passage between the two was hewn for the roadway to avoid a sudden dip in the ground at the mouth of the cove.

Above the roadway stood Building No. XIII, of which four vaults are still standing in one block, and others lie near the head of the cove.

After turning the corner of the bolder headland of the Proprietà Malatesta, a well-known landmark for fishermen, the road would have passed under the much weathered cliffs of yellow tufa along a flat rocky ledge which would not have presented any constructional difficulty to the road-makers. The nature of the foreshore is shown in profile in figure 115. Below the eastern angle of the headland the submerged margin of the ledge shows many signs of having been formerly built upon. One remarkable submerged structure is a relief cut upon the rock, commonly known as the 'Bow of the Ship' by the fishermen, who have a tradition that it was made by a vessel which once ran ashore here. It is the last remnant of a foundation. Upon the crumbling cliff above, other vestiges show where a Roman house has been undermined; the remains are too scanty to indicate the original scale, but the magnificence of the decorations of the rooms is clearly proved by the innumerable glass mosaic cubes and tiny fragments of fine coloured marbles which may still be picked up upon the beach, although such fragments are not to be found upon beaches a few yards distant on either side. 'Und so sehen wir denn,' as Goethe had done at Mola di Gaeta, 'wie die Welle vor unsern Augen mit den Herrlichkeiten der Vorwelt spielen darf.'

In the crumbling cliff-side behind, Mr. R. Holme unearthed fragments of red and yellow coloured plaster, of a composite moulding (fig. 149, a), and of red 'Samian' or Arretine ware.

A few yards further, and in front of two peasants' houses, the

low rocky reef shows traces of another ancient foundation (XI), parts of which have been adapted as a Peschiera.

Then comes Carmen Bay or Cala Garofalo, the largest of the coves along this shore. In the western side, beneath a picturesque overhanging growth of aloes and mesembryanthemum, two artificial caves of nearly equal size are excavated in the yellow tufa. A passage at the back places them in communication with one another and with the beach. Part of the floor of the caves is 3 feet under water, but judging from the weathering of the rocks on either side of the entrance, the caves are old.

Along the rocky stretch of shore between Carmen Bay and the Rosebery Region, the rocks have been quarried straight down to a flat shelf at the edge of the water, but we have not been able to recognize any vestige of ancient building above or under water.

However, near the Capo di Posilipo, the submerged constructions belonged to buildings of great importance, and they extend over so large an area as to merit consideration as a separate Region, which we have named after the Earl of Rosebery, who was the owner of the adjoining property on the mainland, at the time when we first surveyed its foreshore.

Fort.



Cave.

Peschiera.

FIG. 117. ARTIFICIAL CAVES AT VILLA ROSEBERY (Site VI, p. 193).

IV. THE ROSEBERY REGION

At the Capo di Posilipo, the furthest point of the hill visible from Naples, the low cliffs end in a flat shelf of rock, which is partly exposed when the water is low. Upon the surface are artificially cut grooves and hollows, the scars of the foundations of buildings which have long since been washed away; in several places small patches of ancient concrete still adhere to the rock.

On the hill-slopes the dark pine-trees map out the fine property close on 17 acres in extent, with three houses, which formerly belonged to Prince Luigi of Bourbon,¹ but which, having been sold to M. de la Hante, was eventually purchased by the Earl of Rosebery and has since been presented by him to the British Government for the perpetual use of British Ambassadors at Rome.

The natural foreshore has been more or less over-built by a retaining wall 10 to 16 feet high and a narrow quay, but in the fragmentary remains of ancient building and artificial caves may still be seen indications of a bygone population and of the subsidence of the land.

Extending parallel to the shore is a modern breakwater, which, like many of those around the coast, is a *scogliera* made of large rough blocks of lava piled up loosely to the height of a man above the water. It is 213 yards in length, and was built for Prince Luigi by convict labour, ostensibly to enclose a fisherman's harbour, but really to shelter the landing-place of his villa. The western end rests upon a part of the shelf of rock already mentioned, which seems to have been divided from the shore by an artificial cutting, now forming the narrow entrance to the harbour, but which we believe to have been originally cut for the ancient coast road between Pausilypon and Neapolis.

Outside the Bourbon breakwater we discovered the foundations of an important group of ancient buildings spread over a square area having the breakwater for its base and the Pietra Salata for its southern angle. This 'salted rock', about 218 yards from the shore, is a mass of concrete about 11 yards long, 2 yards wide, and standing

¹ Don Luigi Carlo Maria Giuseppe, Conte d' Aquila, was a son of Francis I and was born on 19 July, 1824. In 1844 he married Donna Januaria, the Princess Imperial of Brazil, after whom he named the principal house on the estate 'La Brasiliana'.

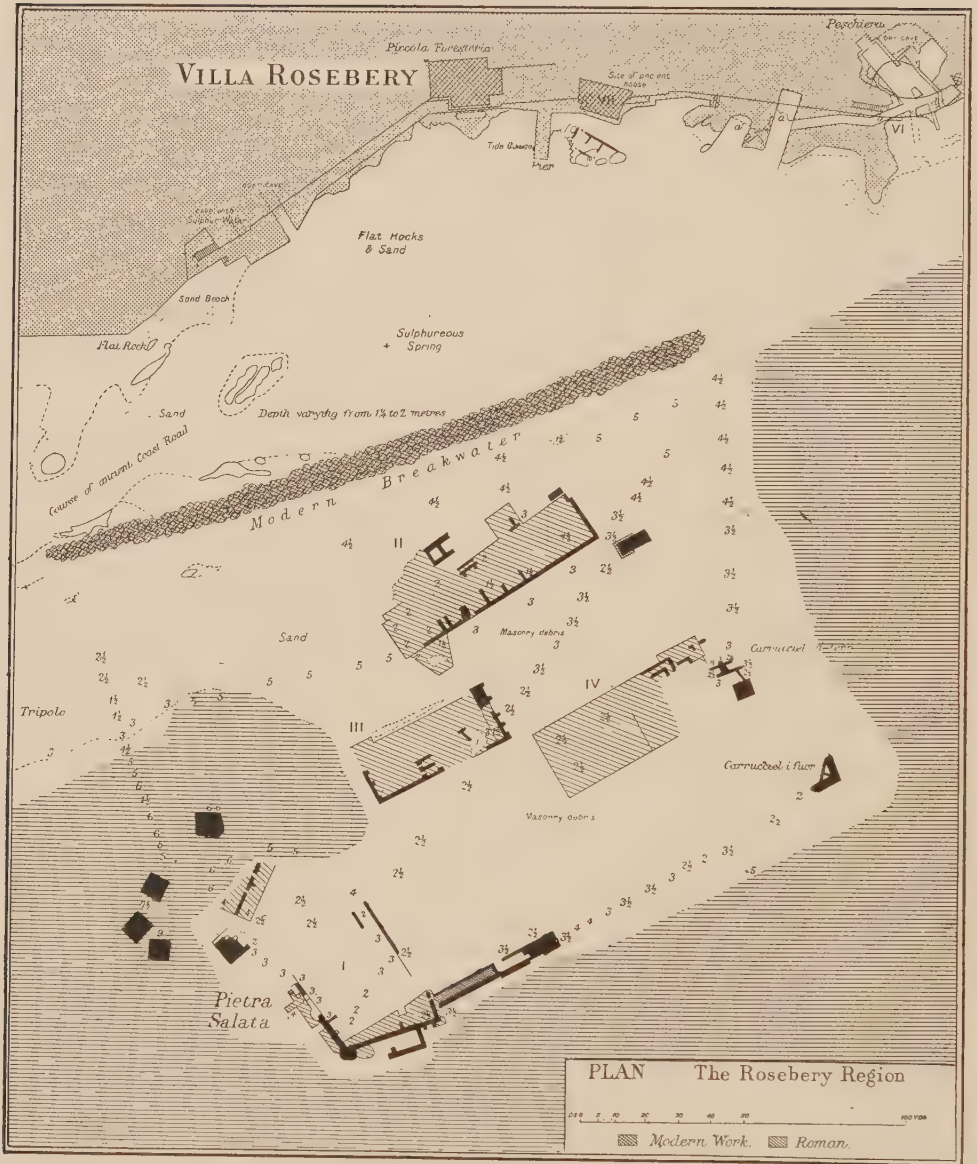


FIG. 118. PLAN OF THE ROSEBERY REGION.

The area shown white is now submerged, but would have been dry land in the Roman period.

3 to 4 feet out of the water. With the land at a higher level the situation must have been superb, but now not a stone is to be seen above water, save only the Pietra Salata.

On summer mornings the positions of the old houses are clearly marked by the boats of the shore fishermen, who earn a precarious livelihood by raking for shell-fish and other *frutti di mare* in the crannies of submerged walls. In rough weather the white crests of breaking waves and streaks of foam indicate more precisely the ancient buildings and the forces which have compassed their ruin.

Some of the old walls are submerged 15 feet and more, but others come so close to the surface as to be dangerous to ill-directed small boats, and according to our Consul's report for 1901 even Government steam-launches occasionally ground upon them.

A general survey of the area on which the submerged ruins stand is shown in fig. 118. It is possible to wade from the Pietra Salata southwards to a structure shaped like a bastion, from which a massive wall can be followed for about 76 yards in an easterly direction. Outside this wall the water rapidly deepens, within it is relatively shallow. There are several indications of small chambers built close to the wall, and exhibiting a complexity of structure which seems to indicate that the building must have been intended for purposes other than those of a mere sea-wall; perhaps it was the lower part of a little temple, or *sacellum* by the sea. Further east, and almost in the same straight line, is the danger to navigation known as the *Carrucciel' i fuor*; it was probably the eastern angle of the structures described, although it is now separated from them by a considerable space of water a fathom deep.

Within these outer works are three rectangular rock and concrete foundations; the two longer ones measure 65 yards by 20 yards, and are raised about 6 feet above the present sea-bottom. From these the lower courses of walls rise to within a yard of the surface. The longer sides of the foundations are all parallel, and face south-south-east. In the case of the two southern foundations, the superstructure is in the best state of preservation at the north-east end, that being the most sheltered from storms. Such details of the superstructure as are still traceable are sufficiently indicated in the plan, and so we need only state here that the end wall of the southern foundation was apparently strengthened by five buttresses which may have supported arches like those shown on one side of the triangular foundation represented in fig. 119, and that in the easternmost the fabric has a more complicated structure, which is not easy to unravel.

We believe that we have here the foundations of three Roman buildings of the type represented in mural paintings found in Pompeian houses. It will be noticed that in the paintings of the type

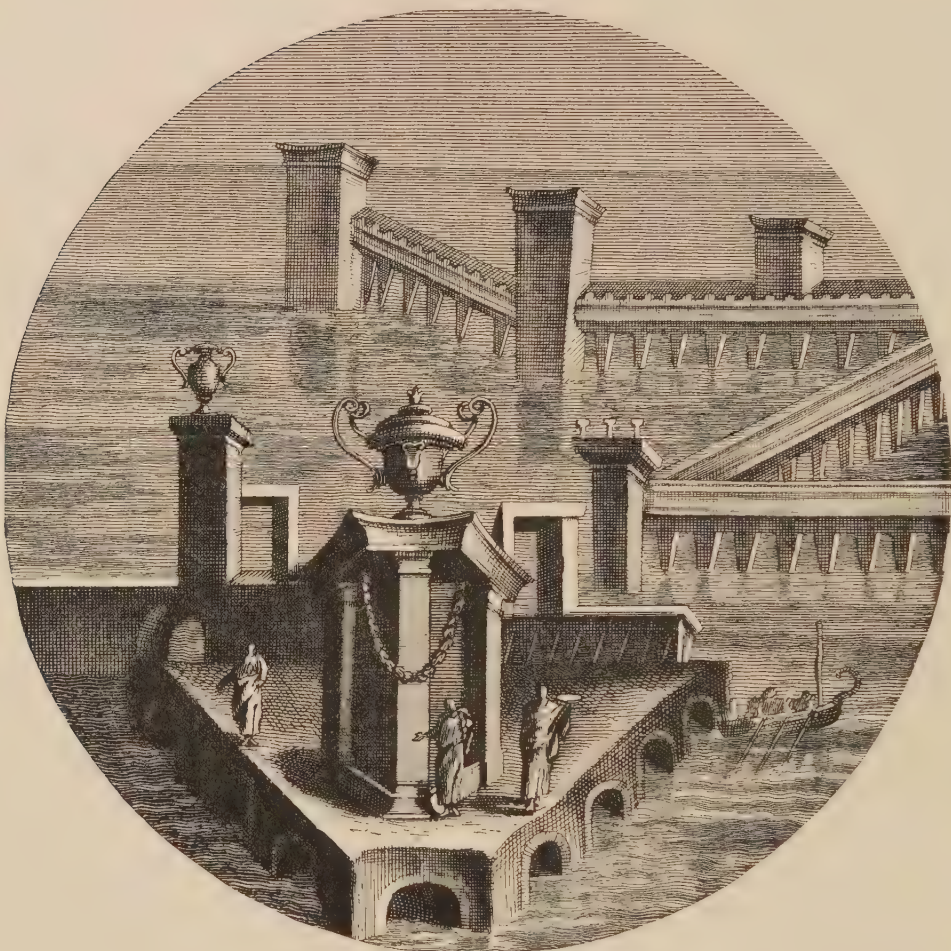


FIG. 119. WALL PAINTING SHOWING GALLERIES SUPPORTED BY PIERS IN THE SEA AND A TRIANGULAR FOUNDATION RESTING UPON ARCHES.

of seaside villas reproduced in fig. 120,¹ the buildings are represented as standing upon raised rectangular foundations of precisely the same ground-plan as those which we claim to have discovered here, and which have also been found below other ruins, to be presently described. The rounded bastion is very like a structure similarly situated depicted in the fresco of houses within a sea-wall (Fig. 121).²

¹ Fig. 120 is taken from *Le Pitture antiche d'Ercolano*, ii. 285, which has been copied by Roux aîné, vol. iii, pl. 16. Compare Roux aîné, iii, pls. 12, 23 and 28, and Mau, fig. 270. The buildings in our illustration show the covered galleries or *crypto porticoes* of Pliny, *Epist.* ii. 17, and the open terraces or *hypæthra* of Vitruvius, v. 31.

² *Pitt. ant. d'Ercolano*, ii. 295. The original was at Gragnano.

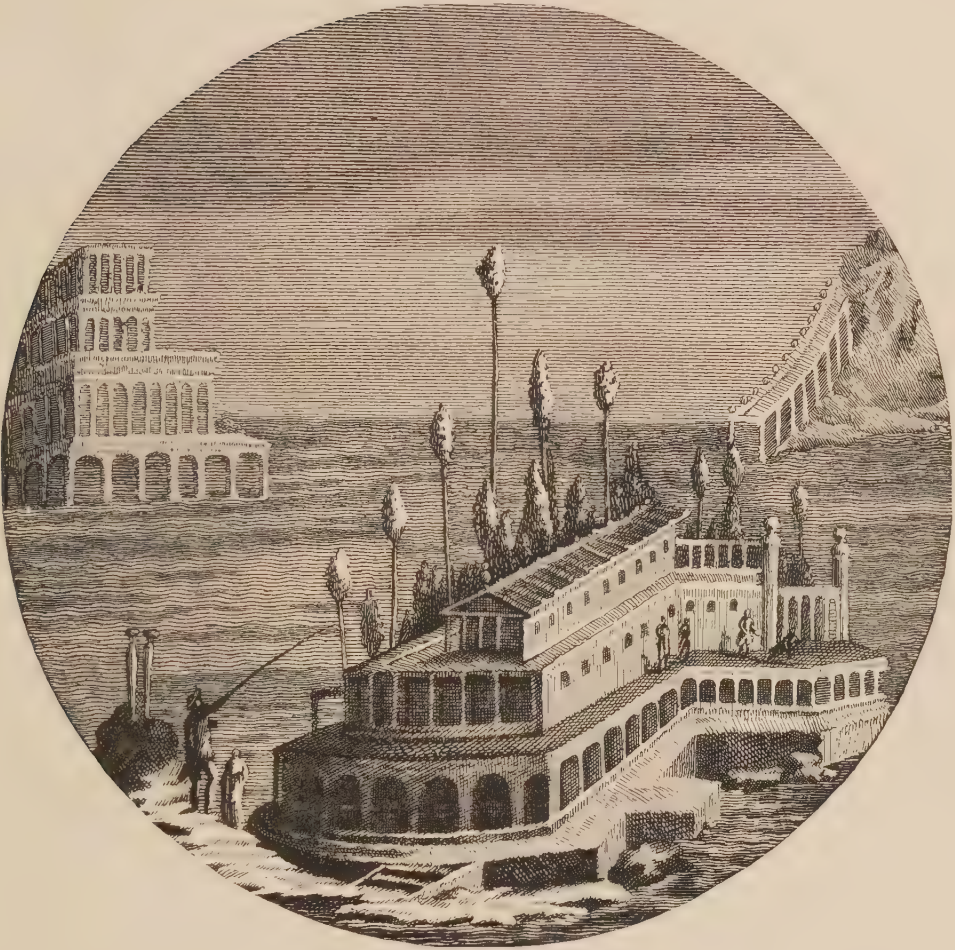


FIG. 120. WALL PAINTING SHOWING FOUNDATION OF A BUILDING BY THE SEA.

In the absence of other evidence we claim that it is very possible that here we have concrete foundations of houses such as those which Horace had in his mind when he wrote: 'You on the verge of death contract for blocks of marble to be hewn, and unmindful of the grave, are rearing mansions and are all eagerness to thrust backward the shores of the sea that roars against Baiae; for not enough does the bound of the mainland enrich you.'¹

Soundings made inside the Pietra Salata show that the depth over most of the area is only 10 feet or less, but that there is a depression of some 20 feet which runs in from the south-west. The southern limit of the depression is marked by two artificial structures which rest

¹ Horace, *Od.* ii. 18; cf. *Od.* iii. 1 and 24, also Virgil, *Aen.* ix. 711.

upon the same rock as the *Pietra Salata*, and which probably formed part of the same edifice. The northern limit is formed by the *Tripolo*, a large rock, upon which we have not noticed any ancient foundation, but which must have been high and dry in the Roman period. In the depression stand four rectangular piers of concrete each close upon 20 feet square. The piers are about 16 feet in height, the outer one rising to within 13 feet of the surface from a depth of 30 feet, and the innermost to within 3 feet from a depth of about 16 feet. If we assume that the lowest pier originally projected about 4 feet above the surface, the water alongside would still have been two fathoms deep.

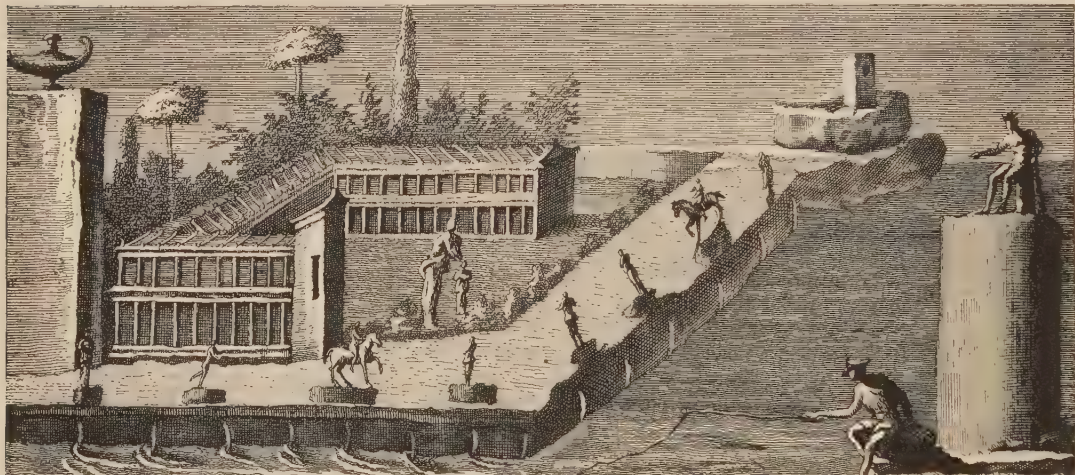


FIG. 121. WALL PAINTING SHOWING A SEA-WALL. On the pedestal is a statue of Hercules.

About their being artificial there can be no doubt, for the upper portions at any rate are of concrete, and their shape is not a natural one. They closely resemble the piers employed by the Romans as breakwaters or defences to the harbours already described: they may have been constructed either for the purpose of breaking the force of the waves, which would otherwise have run over the shoals and have broken violently at the foot of the buildings, or to shelter a small harbour, or else as supports for ornamental columns or for statues, like the piers represented in several Pompeian frescoes. In a Gragnano picture¹ similar piers carry the ends of a wooden pavilion overhanging the sea, and bridges like that represented in an unpublished fresco from a villa at Boscoreale, now in the British Museum,² were not unfrequently thrown out from the shore to piers in the sea.

¹ *Pitt. ant. d'Ercolano*, ii, pl. li, p. 277, reproduced in *Archaeologia*, lvii, p. 235.

² Register, No. 99, 2, 15, 2.

At the back of the region, traces of ancient work are still discernible under the low cliffs below Villa Rosebery, where a few excavations in the tufa, now almost obliterated, are the last vestiges of buildings which once overlooked the foreshore.

One of these ancient sites is the Peschiera (VI) at the extreme east of the property, in some large caves hollowed out of the solid rock, and furnished with an ingenious arrangement of channels and sluice-gates for renewing the water within. The caves seem to have been adapted for pisciculture, when, under the Bourbon rule, that industry was actively carried on in several places in the neighbourhood; but now, either owing to jealousy of fishermen, to raids of poachers, or to lack of financial support, the caves have, like other appurtenances for fish-culture along the Posilipo coast, been allowed to fall into decay, and the outer cave, owing to the collapse of the roof, is open to the sky. The site VI is shown in fig. 117.

It is difficult to believe that the solid rock was excavated on so large a scale only to provide fish-tanks; it is more likely that we have here the quarries whence stone used in the erection of the neighbouring buildings was obtained, and which were subsequently adapted for use as a Peschiera. This view is supported by the fact that one of the caves has been excavated down to, but not beneath, the water-level, whereas those which have been adapted as fish-tanks have been deepened so as to contain from 2 to 3 feet of water.

The outer parts of the cave seem to be of a much greater antiquity than the inner, and still show traces of ancient plastering. The groove of erosion which we associate with the period of greatest submergence of the land is well marked on the face of the cliff, and is continued into the mouth of the cave, thus attesting its antiquity.

A low artificial cave *a* near the mouth of the western outlet of the Peschiera is submerged to a depth of 3 feet. It seems once to have been longer, but the roof being thin has partly fallen. Just beyond and lower down another artificial cave is outlined in the rocks.

An ancient building stood upon the site of the smaller of the two modern houses on the sea, which has been built over a fisherman's cottage of great age. The living room of the cottage, which extends into the rock behind, has become the basement of the house; but so little is the floor raised above the water, that, notwithstanding the modern breakwater, waves frequently dash over it. It is unlikely that this fisherman's cottage was built in so uninhabitable a situation; we prefer to accept it, together with the submerged caves already mentioned, as having been part of the group of Roman buildings

erected on a higher land-level. Rocks in front of the cottage bear marks of having been quarried, but these marks may perhaps be traces of the foundations of buildings.

It is strange that this important quarter should have disappeared without leaving any local tradition. It should, however, be remembered that the little old church of S. Maria Fortuna in the vicinity has been supposed to derive its name from an ancient temple to Fortune, somewhere near. This temple may have occupied one of the foundations of the Rosebery Region.

Of other antiquities there is not much to relate. It is said that the ancient columns which used formerly to stand, connected by chains, below the Villa Gerace, came from this site; but we have not seen them. We found the marble base of a large column (fig. 134, c) in a cellar of the Villa Rosebery: it was covered with tiny pittings which were evidently the borings of marine organisms, and which therefore prove the base to have lain submerged for a prolonged period. It is quite likely that this base was dredged up in the Rosebery Region.

The Coast Road to Neapolis.

The former existence of the roadway under the cliffs from the Capo di Posilipo to Neapolis has already been indicated.¹ We have traced its course from the Tunnel of Sejanus through a short tunnel below the House of Pollio down the Gaiola Valley to Pausilypon Harbour. From the harbour it passed along ledges of rock on the seaward side of the many buildings which stood along the foreshore of the Marechiano Region, and reached the submerged region which has just been described. The evidence for its continuation along the foreshore to Neapolis was derived partly from the argument of the need of communication between the many ancient buildings standing along the shore, partly from the existence of Roman columbaria along the route, and partly from ancient tunnels or cuttings piercing the more exposed headlands, through which the roadway would have passed. The floor of one of these tunnels is now submerged to a depth of 5 feet.

By this coast road Puteoli would have been connected with Neapolis, and the purpose of the tunnel of Sejanus is clearly explained. This huge work of subterranean engineering will long bear testimony to the importance of the sunken Regions of Posilipo, of the Gaiola, Marechiano, and Rosebery Regions, to which the beautiful

¹ For details see Günther, *Earth Movements*, pp. 36-50.

imagery of the poet might have been applied with even greater aptness than to Venice :

Sun-girt City, thou hast been
 Ocean's child, and then his queen ;
 Now is come a darker day,
 And thou soon must be his prey
 If the power that raised thee here
 Hallow so thy watery bier.

And all is in its watery state
 Save where many a palace gate
 With green sea-flowers overgrown,
 Like a rock of ocean's own,
 Topples o'er the abandoned sea
 As the tides change sullenly.



FIG. 122. THE CAVALCANTI TUNNEL FOR THE COAST ROAD.
The two Rocks of SS. Pietro e Paolo are shown in the sea to the right of the Villa Grotta Marina.



FIG. 123. ENTRANCES TO THE CATACOMBS NEAR THE RAMPE DEL COROGLIO.

THE BURIAL-PLACES OF POSILIPO.

1. Near the sewage outfall at **Coroglio** two oblong tombs covered with large tiles were found at a depth of 6 feet, and quite near them a dolium 3 ft. 5 in. high by 2 ft. 8 in. in diameter (*Atti R. Accad. Linc.*, 4^a ser., vii, 1890). Burials with jars are referred to by Pliny, *Hist. Nat.* xxxv, c. 46 *Quin et defunctos sese multi fictilibus doliis condi maluere*, and many such buried amphoras have been exhumed at a site near Ravenna (*Atti R. Accad. Linc.*, vi, 1889).

2. A similar burial was found in the bed of the **Gaiola Valley** at a depth of more than 6 feet below the present surface of the vineyard. At the four corners of what remained of a tomb, roughly constructed

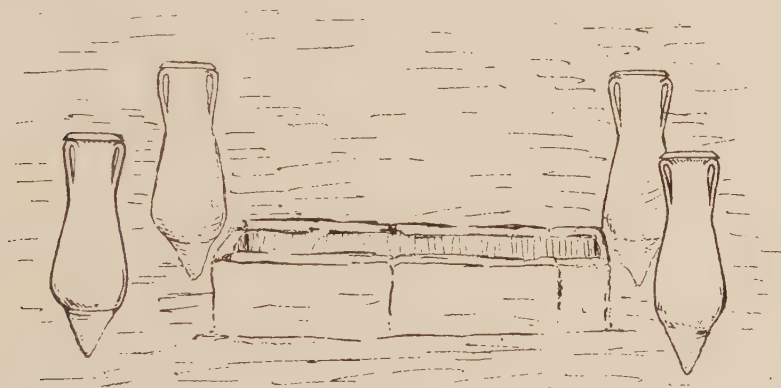


FIG. 124. TOMB WITH AMPHORAS.

of large tiles, were found four amphoras with wide mouths and spreading lips, 3 ft. 2 in. high, and 10 inches across the mouth. It is a pity that the orientation of this interesting burial was not noted.

3. The Catacombs of Posilipo.

Near the village of Casale there was a burial-place of some importance, which Fusco considered anterior to the seventh century on account of certain resemblances to the catacombs of S. Gennaro at Naples. As it has not been figured so far as we are aware, we give three photographs of the site.

Six low chambers described as resembling the corresponding structures of the upper series of the catacombs of S. Gennaro have

been roughly hewn in the tufa rock at the end of the Rampe del Coroglio. Three of the burial chambers are below the general surface of the ground, and are quite independent of one another; three are above it and probably were also separate, though the dividing



FIG. 125. INTERIOR OF THE CATACOMBS NEAR THE RAMPE DEL COROGLIO.
Showing Sepulchral Chambers at two levels.



FIG. 126. A SEPULCHRAL CHAMBER, RAMPE DEL COROGLIO.

walls have now partly fallen away. Small flights of steps lead into the several chambers. In the walls were small niches of various sizes, and in the bottoms of these are cavities covered with tiles, very like those in the catacombs. The traces of coarse plaster on the walls show no signs of paint.

4. In the vineyard of the **Poggio Lucullano**, a tomb of opus reticulatum covered by a marble slab bore the following inscription in letters $1\frac{1}{8}$ inches high :

SÁTŮR · SÓLIS LŮNĀE · MĀRTIS
RÓMAE CAPŮAE · CALĀTIAE · BENĒV

The circles indicate holes stained with corroded copper, indicating the bronze fixing-nails (*Atti R. Accad. Linc.*, ix, p. 238, 1891).

5. Portions of three marble sarcophagi exist in the village of **Marechiano**. One, used as a well-head, is figured and described on page 267. The flat sides of two others, measuring 62 inches by 31 inches, may be seen in Marechiano church, used as altar railings. Both are ornamented with S-shaped flutings, and one has a cornice moulding enriched with egg-and-dart and bead mouldings.

6. On the side of the Palazzo Donn' Anna facing Mergellina, on the property of **Cesare Brancia** and near the shore, were three sepulchral chambers, in each of which were nine tomb recesses for bodies, three hewn one above the other in each of the three walls.

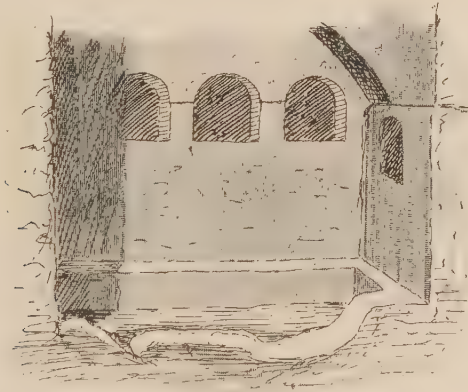


FIG. 127. SEPULCHRAL NICHES, RAMPE DEL COROGLIO.



FIG. 128. INTERIOR AND GROUND-PLAN OF THE COLUMBARIUM KNOWN AS THE TOMB OF VIRGIL (*after Paoli*).

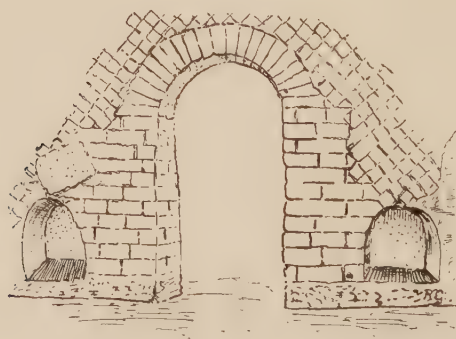


FIG. 129. TOMB OF VIRGIL. North Wall.

7. 'The Tomb of Virgil,' so called.

Few of the memorials of antiquity have suffered greater defacement than the Posilipian columbarium which has been associated with the name of Virgil, for so many centuries. It has had to pay the penalty for this celebrity by becoming the happy hunting-ground for generations of relic-hunters. Were it not for its position, perched upon a sheer rock 45 feet above the roadway, it is doubtful whether by this time one stone would have been left standing upon another; for the ignorant have done as much harm as the admirers of the poet. It is questionable who is the more guilty of profanation to his memory, those who have filched stones, the admirer who put up a slab to her lap-dog, or the tourists who, having quite stripped the branches of the bay-tree which once crowned the tomb, then cut mementos from the roots.

The situation of the tomb relatively to the entrance of the tunnel is shown in the figure on p. 17. The exterior is in a ruinous condition. The ground-plan was square and orientated to the points of the compass. Each side measures 21 feet, the walls being about 3 feet in thickness. The tomb is surmounted by a cylindrical dome of some 16 feet in diameter. The single doorway, facing northwards towards the road, is now inaccessible. It led into a chamber ceiled with a barrel-vault and lit by three windows, one over the doorway in the end wall, and two through the sides of the vault. In the thickness of the wall ten niches may still be seen, but it is very likely that an eleventh and larger niche occupied the centre of the south wall, through which the present entrance of the tomb has been broken. Here, in the place of honour, the urn containing the ashes of the principal occupant would have been placed.

The door jambs are faced with lateritium tufa blocks, which are more correctly shown in fig. 129 than in Paoli's more artistic representation.

8. The real Tomb of Virgil.

So many generations of tourists have painfully climbed the steep ascent to the tomb near the entrance to the Posilipian tunnel, and have paid a total of so many thousands of francs to voluble guides, and, having worshipped his memory, have come away in rapture at having accomplished the pilgrimage to Virgil's tomb, that it seems rather a heresy to suggest that they have been deceived.

Yet evidence tends to show that the association of the poet's name with this tomb is only one of the many myths which have sprung up

regarding him. And yet, though many a Neapolitan story about him is obviously untrue, it is wellnigh inconceivable that the place of his burial should have been forgotten in Naples, a city in which his memory was so consistently cherished among all classes. The facts are stated to be as follows.

Virgil expressed a wish on his death-bed to be buried in the city with which he had been so intimately connected and near which his country estate lay. According to Donatus, who is believed to have relied upon an early biography compiled by Suetonius¹ and written between A.D. 98 and 138, his bones were conveyed to his beloved Naples and were placed in a tomb built on the road leading to Puteoli 'intra lapidem secundum'.² The tomb must have been one of the chief ornaments and most sacred possessions of the city for many years, for not only was his memory kept green—his works were read in schools and rehearsed in the theatres, and quotations were even scribbled on the walls—but poets made pilgrimages to the tomb, just as now those who pay homage to Shakespeare, journey to Stratford-on-Avon. Statius and Silius Italicus both regarded the burial-place as a temple, and the latter even made a point of celebrating his birthday there, '(Vergili) cuius natalem religiosius quam suum celebrabat, Neapoli maxime, ubi monumentum eius adire ut templum solebat.'³ At a later date a particular day in the calendar, the Ides of October, became sacred to Virgil.⁴ In the fifth century the grave of Virgil was described as the boast of Naples.⁵

With all this Virgil-worship going on, the identity of his tomb could not have become confused, and, as Comparetti has justly observed, from what we know of the reverence with which Virgil continued to be regarded, we may conclude that the Neapolitans must have been for many centuries accustomed to inquiries from all educated foreigners as to the poet's grave.

He is referred to by two of the writers who lived in the Dark Ages. The tenth-century author of the life of Athanasius mentions the epitaph which Virgil had composed for his own tomb,⁶ and the

¹ Suetonius, *De Viris Illus.*

² Donatus, *Vit. Verg.* p. 63.

³ Plin. *Epist.* iii. 7, 8, and cf. *Stat. Silv.* iv. 4, 54; *Theb.* xii. 816.

⁴ Mart. xii. 67; Auson. *Idyll.* v. 23.

⁵ Non quod Mantua contumax Homero
Adiecit latialibus loquelis
Aequari sibimet subinde livens
Busto Parthenopen Maroniano.

—Sid. Apollinaris, *Carm.* ix.

⁶ *Scriptores Rerum Longobardicarum* (*Mon. Germ. Hist.*), p. 440.

Provençal troubadour (twelfth century) Guilhem Augier speaks of him as 'Cel que jatz en la ribeira . . . lai a Napoli'.¹ How then came the site to be disputed?

The answer we can give has solved many other difficulties in this region. It is that the land has sunk and has carried with it the true tomb of Virgil below the sea-level.

The exact spot ought to be easy to find. Donatus tells us that the tomb was by the roadside within the second milestone along the Puteolan Way. It was therefore down on the foreshore in what are now the broad public gardens of the Villa Nazionale. And not only that, but the troubadour sang of Virgil as 'He who lies on the sea-shore,—there by Naples'.

The Roman columbarium which is now pointed out to every visitor as the tomb of Virgil is not on the sea-shore, nor is it within the second milestone along the Puteolan Road. It is high up on the side of a hill, overlooking the entrance to the tunnel of Posilipo, which the mediaeval magician Virgil is supposed to have created by black art; and there is no other reason than modern popular tradition, for associating the tomb with the poet.

The theory of subsidence affords a solution of the difficulty. The foreshore within the second milestone is now some 20 feet below its level in Virgil's day, and it has been 40 feet lower. On several occasions when in recent years deep excavations have been made in the shore, Roman constructions have been encountered below sea-level. The low position of the ancient church of S. Lorenzo was an indication of subsidence. Consequently a tomb on the shore must have been buried deep under sand and water, and so have been lost to memory in the Dark Ages. But Neapolitans would have become unworthy of their traditions if they could not continue to point out a grave as that of their great benefactor, and what more natural than that a tomb of about the same period, near the wonderful tunnel associated with his magical powers, should have been considered a suitable site?

In the varied stories concerning the fate of his remains we find indications of more than one change of resting-place, and indeed the very discrepancies may be due to such changes having really occurred.

Villani, a writer in the fourteenth century, states that the bones were placed under a marble slab bearing the oft-quoted inscription:

Mantua me genuit, Calabri rapuere, tenet nunc
Parthenope: cecini pascua, rura, duces.

¹ Bartsch, *Chrestomathie Provençale*, 4th ed., p. 73, 2.

This may have been done after a removal from the sea-shore to the Posilipan columbarium.

In the time of the Ruggieri the monument was transported to the Castel Nuovo, and all further trace of it had been lost when Celano wrote. On the other hand, Alfonso Heredia or Ferrera, a monk belonging to a monastery situate not far from the Posilipan tomb, is reported by Capaccio¹ to have given a different account, namely, that the bones of Virgil, contained in a marble urn with nine small pillars, were taken away by the Cardinal of Mantua to Genoa, where that ecclesiastic died. But Stefano,² who lived a century after Villani and was a contemporary of Ferrera, admits having seen the urn, though without the ashes in it, and does not allude to its removal by the Cardinal of Mantua. Paoli was of the belief that the urn seen by Stefano was a modern one, as is the inscription outside the tomb (1554).

¹ *Historia Puteol.* cap. 34.

² *Descrizione de' luoghi sacri*, i. 2.

Among others who have written on this subject are: Peignot, *Recherches sur le tombeau de Virgile* (Dijon, 1840), and Cocchia, *La tomba di Virgilio, contributo alla topografia dell' antica città di Napoli* (Loescher, Turin, 1889). Cocchia maintains that the grave is at the second milestone on the Via Puteolana. 'Ossa eius Neapolim translata sunt, tumuloque condita, qui est via Puteolana intra lapidem secundum,' Donat. *Vit. Verg.* p. 63.

CONCLUSION

BEFORE proceeding to the detailed enumeration of the more movable antiquities, we may note in a general way a few reflections to which our study of the site has led.

To begin with, the site was so geographically suitable to the requirements of the early Greeks who colonized these shores, that we may infer an early settlement here, though it is not likely to have been on a large scale, on account of the distance of these volcanic hill-slopes from any source of fresh water, except tank-water. We imagine that the Greek settlement might not have been much more than a small cluster of fishermen's huts and caves on the low promontory which then extended to the seaward of the Gaiola Islands, but which is now submerged. The submergence of the site, no less than the building over it of the Romans, would fully explain the absence of any distinctive remains of the Greek Epoch.

The Etruscans are known to have been masters of so great a part of Campania that the finding of a few fragments of the terra-cotta decorations of a building in the style of the third century B.C., is a tempting excuse to assert their presence upon Posilipo. The remarkably close resemblance of these fragments to the terra-cottas from Civita Lavinia (*Lanuvium*) has already been pointed out.

It remains to be explained how, and by what stages, the site came to be of such consequence in the Roman Period, that its ruins even after nineteen hundred years of neglect and vandalism still show its importance: the vestiges as they stand cover an area large enough for a village.

Almost every building shows unmistakable signs of having been altered and added to; in many cases a later structure has been built of the materials of an earlier one. The older work is often in tufa, while the later additions are in brick. Everywhere the changes seem to be in the direction of greater magnificence, and luxury. They are of the kind that would not presumably have been made by any one proprietor, but are of the nature that we might have anticipated

from our knowledge of the history of the site, in a property that had passed from the possession of a private gentleman of means to the Emperor Augustus, and from him to his successors including Hadrian. Imperial owners would not have shown much respect for the humbler architectural efforts of their predecessors nor have spared money or labour in carrying out their improvements.

We may now consider what the attractions of this property may have been to its successive owners.

The question has often been asked: Had the Romans any real love of nature? Their love of magnificence is undoubted. Their dwellings were surrounded by terraces and porticoes in bewildering profusion, and when opportunity offered, they clipped all amenable vegetation to the same stiff architectural outlines, which leads us to imagine that they liked their flowers grown in formal beds. With many the reason for their love of the country was the very modern one,—love of change. Horace truly voiced the feelings of the average Roman when he wrote, ‘Fickle as the wind, I love Tibur when at Rome, and regret Rome when at Tibur.’ Hor. *Ep.* viii.

We suppose Vedius Pollio to have been a man of his time in this respect, and to have laid out an ordinary Roman ‘Villa rustica’ in the approved fashion of the day. As was then probably the custom, he gave it a Greek name and would have done his best with so incomparable a site. His buildings would have had different aspects: some would face inland looking up a valley of verdure such as is seldom seen so near the sea; others would look across the Bay of Puteoli and from them the arrival of the ships from Phoenicia and the Aegean, from Spain and Africa could be seen argosies bringing treasures from all quarters of the known world to the principal port of Rome. The arrival of the fleet from Egypt in the spring became one of the events of the year.

Some of the pavilions of the villa would have been built out in the sea, founded upon massive piers of concrete. The caves in which the old Greek fishermen had stored their boats and tackle, had been enlarged by quarrying until their size became an object of amazement; and even more wonderful than these were the fish-ponds in the sea itself. In the grounds there was an abundance of fresh water brought by the great aqueduct from the Apennines and the overflow of fountains and water-conduits no doubt amply compensated for the absence, except after heavy rains, of a natural stream down the valley.

Such may have been the principal features of the Pausilypon as Virgil knew it, and as it was in 15 B.C. when at the death of Pollio it passed with other property to Augustus. We do not know if Augustus himself developed the property to its full extent, or whether this was done gradually by his successors, as for instance at the time when the aqueduct water was being taken to the neighbouring Villa of Felix Pollio in A.D. 65, but we know for certain that Hadrian made alterations, and we may assume that the villa had been completed before the end of his reign. Great as were the luxuries of a private citizen, the requirements of an Imperial court were far greater. If we allow that the Greek theatre was a part of the villa during the earlier period, the temple, the odeon with a special box for the Emperor, and the baths on a more elaborate scale, all indicate an era of greater magnificence than obtained at the time of Pollio's death.

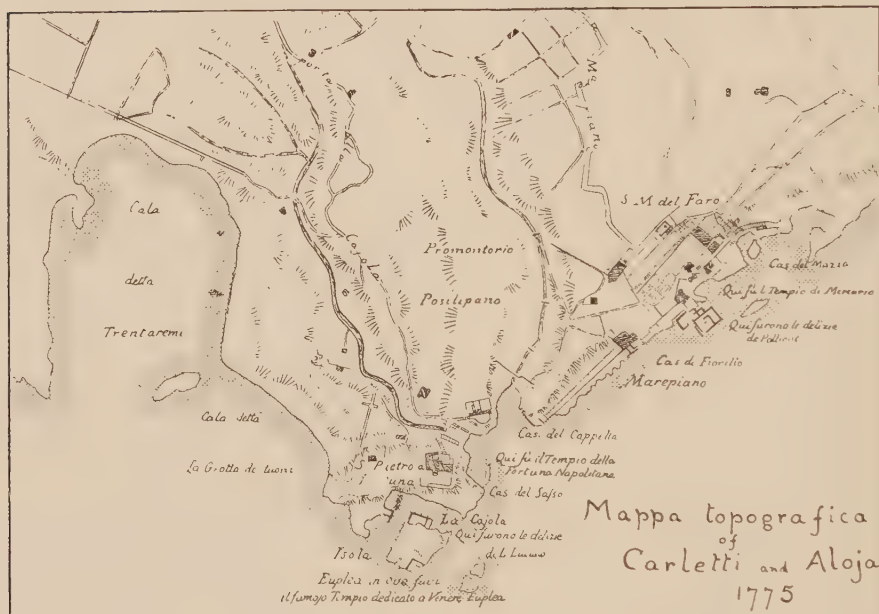
In the Imperial Villa at Tivoli we have a most striking example of what Hadrian considered necessary in his country house. He was no advocate of the 'simple life'. His extensive travels had made him conversant with what was best in the Empire, he had acquired a larger sense of the magnificent than his predecessors and he had rebuilt and restored endless buildings and monuments during his journeys. The Pausilypon would have been on too small a scale to satisfy him. There was no room for a Poecile, with pictures after Polygnotus or for a Canopus to remind him of Egypt, on the scale on which he wanted them; still, it may have suggested features which were introduced later at Tivoli, and perhaps may also have provided some of the sculptured masterpieces with which he enriched his collection.

Two facts may be of importance for the later history of the site. The one is the finding of a coin of Claudius Gothicus (A.D. 268-70) in a drain of the Baths of Hadrian, and the other is the milestone which shows the great tunnel to have been in use as late as the reign of Constantius Pius (A.D. 335-61).

We have no knowledge that the marbles of the Imperial Villa were consumed in lime-kilns, like those of Rome; but the site is conveniently near the sea. Much was shipped off to Spain by order of the Spanish Viceroys; much has been used to embellish local churches; but little that can be identified has found a home in public collections. The Nereid of the Naples Museum and the bearded Dionysus in London are the best-known pieces.

The relics of the past are few: like the pieces of an imperfect jig-saw puzzle too scanty for the piecing together of the picture;

nevertheless they reveal a life of extreme complexity, and further research would undoubtedly link together many points of interest. Would that the Italian government might exercise its rights, complete the work of scientific excavation and preserve what remains of the Imperial Villa as a National Monument.



APPENDIX

NOTE

IN this appendix we have endeavoured to catalogue and figure all the antiquities which we have ourselves seen upon the site of the Imperial Villa, as well as those mentioned in accounts of the earlier excavations. To make for greater completeness, we have included the whole of Posilipo in our review, but we fully realize that by doing so, many antiquities will inevitably find their way into the list which have not been found in or near the site which is the more particular object of this monograph, as well as some few, which have been transported to the hill within recent years. At the same time, we hope to have gathered in a few items which originally belonged to the Pausilypon but which have been moved to adjoining properties.

We have followed the Italian custom in identifying sites by the names of the proprietors, with the result that the same site occasionally appears under different names, e.g. Bechi Estate, Foley Estate, but the system has this advantage, that it enables us to indicate the period as well as the locality of a particular find.

References to other authorities are usually given in full, but the names of Fusco and Ruggiero are abbreviated to F. and R. A. G. is added in certain cases in which the author has been able to corroborate the statements of others, but for the accuracy of all other details, drawings, or photographs he must be held solely responsible.

INSCRIPTIONS

1. viam a proMONTORIO
 villaE PAVSILIP
 diu · nEGLECTAM
 RATVS · VC · CAMP
 cons · vsvi PVBlico REDDIDIT

There are several readings of this important fragment. It was found in the tunnel of Sejanus during the progress of the work of 1841. The reconstruction of the inscription given by Mommsen is a more probable one than that attempted by Giuseppe Maria Fusco, A. T. Gianpietri, and G. V. Fusco, who by reading *Honorio* instead of *promontorio* referred the inscription to the fifth century.

Cf. G.M.F.A.T.G.G.V.F., *Frammento inedito di uno scrittore napolitano del secolo XVI* (Fabio Giordano), Napoli, 1841; *Bullettino Napolitano*, 1841, p. 148; *Giunta al comento*, Napoli, 1842; *Bullettino Napolitano*, i, p. 29; Henzen, 5159; Fiorelli, *Cat. No.* 1127; Mommsen, *C. I. L.* No. 1488.

2. D · M
 M · VLPivs · AVG · LIB
 EVPHRATES
 QVI · PROCVRAVIT · PAVSILYPO
 FECIT · SIBI · ET · SVIS · ET
 LIBERTIS · LIBERTABVSQVE
 POSTERISQVE · EORVM

Fabretti III, 486; Beloch, *Campanien*, p. 86.

3. Q · T · C

On the eastern side of the plinth of the base of one of the columns of the 'Temple of Fortune', Marechiano, figured on p. 183.

Below, in an older type of character, E; also II. Cf. Gervasio, *Inscr. Nap.* p. 66.

FIG. 130. INSCRIPTIONS 4, 5, 6. $\frac{1}{4}$ full size.

4.

PO
PO
R\
r

Marble fragment in two pieces, 10 in. $\times$ 6 in., found on the Galliardi Estate, and now deposited in the Ashmolean Museum, Oxford. Height of letters, $2\frac{3}{10}$ inches.

To read POLLIONIS, the family name of the proprietor of the Villa, is a most tempting conjecture.

5.

RVSAE
C. IIP

Marble fragment, 8 in. $\times$ $4\frac{1}{2}$ in. Height of letters, $2\frac{3}{10}$ inches.

The last line may perhaps be an abbreviated form of COS · II · P · P.

6.

CLAVDIVS
SPÉRÁTVS

Marble slab measuring $13\frac{1}{2}$ in. $\times$ 9 in. Height of letters, $1\frac{3}{4}$ inches.

The name *Speratus* has already been noted in an inscription from Bacoli. *Ephem. epigr.* viii, No. 421.

7.

XX ·

Marble slab, 8 inches in length, in the garden of the Villa Maza, Marechiano.

8. M · S
SEVIAE · GE
MELLAE · ET
FISIAE GE
MELLAE
SEVIA PRISC
MATR S FFII

Size, 18 in. x 22½ in. Affixed to a wall of the Villa Maza, Marechiano.

9. C · IVL | ANGELO
L · HEI | AES

Height, 5 inches. Height, 6½ inches.

In a pavement of *opus signinum* in the grounds of Villa Vilbort and Marey, near Villa Canonico, not far from sea.

Atti R. Accad. Linc., 4^a ser., vi, 1889.

10.

- i. MACRINUS · DIADVMIINI · AVG · L · PROC · ANTONIANI ·
DISP · HIC · FVIT · NIIRVA · IIT · VIISTINO · COS · PR · IDVS ·
IANVARIAS
- ii. MACRINVS · DIADVMIINI · AVG · L · PROC · ANTONIANI · DISP ·
HIC · AMBULAVIT · NIIRVA · IIT · VIISTINO · COS · PR · IDVS · IANVARI
AS
- iii. MACRINVS · DIADVMINI · AVG · L · PROC · ANTONIANI · DISP · HIC ·
AMBULAVIT · A · VILLA · POLLI · FILICIS · QUAI · IIST · IIPILIMONIIS
VSQU · AD · IIMISSARIUM · PACONIANVM · NIIRVA · IIT · VIISTINO · COS

A. D. 65.

“Macrinus Diadumeni Aug(usti) l(iberti) proc(uratoris) Antoniani disp(en-
sator) hic ambulavit a villa Polli Felicis, quae est epilimones, usque ad
emissarium Paconianum Nerva et Vestino cos. Pollium Felicem Statius
celebrat passim. (Antonianus intellegendum de Antonia maiore, nam a. 65 in
vivis erat Antonia minor. O.H.)”

These three inscriptions were found on the inner wall of the Posilipan
Aqueduct. i. was on the right; ii, which differs in one word only from i, on
the left, and not far from the valedictory remark about Liberius. (No. 11.)

Ephem. Epigr. x, Nos. 335-337; Minervini, *Pungolo*, Jan. 4, 1883;
Bassel, *Centralblatt der Bauverwaltung*, 1883, No. 3, p. 28; Ruggiero apud
Fiorellium, *Notizie degli scavi in Atti R. Accad. Lincei*, cclxxx, 1883,
pp. 50-52; Le Blant, *Comptes rendus acad. inscr.*, ser. 4, vol. xi, p. 160 1883.

11.

LIBERI VIVAS

Ephem. Epigr. x, No. 338; Ruggiero, l. c., &c.

12.

C, CC, CCC, CCCC, D,
on the right, and on the left hand

CIO,	CCIO,	DCCC.
1000	900	800

and elsewhere the numbers CXC and MIOI

These numbers were impressed on the plaster, when wet, of the Posilipan Aqueduct at equal distances of 96 English feet, and were intended to be 100 Roman feet apart.

Ephem. Epigr. x, No. 339.

13.

[L]ACILI STRABONIS

Stamped in relief upon a lead water-pipe, stated to have been excavated on Posilipo. The name occurs in an inscription (*C. I. L.* 1486) found at Naples:

L. STERTINIO · C · F · MAEC · QVIN(tiliano)
ACILIO · STRABONI · C · CVRIAT(io ma)
TERNO · CLODIO · NVMMO
IVLIVS ATTICVS PRAEF. COH.

14.

[IMP · CAES ·] TRAIANI · HADRIANI · AVG

This inscription in raised letters reading from right to left was found upon a lead water-pipe excavated in the Upper Baths on Posilipo, and may be taken as evidence of the date of the more recent alterations. Similar inscriptions IMP · CAES · TRAIAN · HADR · AVG have been found on lead water-tubes found in Naples not far from the Porta Capuana. Cf. Mommsen, *C. I. L.*, 1496. There is evidence that much building was done at Puteoli during the reign of Hadrian, and although his name occurs as a brick stamp with the letters in inverted sequence, this is the first occasion on which it has been found reversed upon lead pipe. Fig. 78, p. 129.

15.

OIA
IDYN
QYO
9A

Engraved on a bronze seal found near the Via Castellana, near Coroglio. *Atti R. Accad. Linc.*, 4^a ser., vii, 1890.

16.

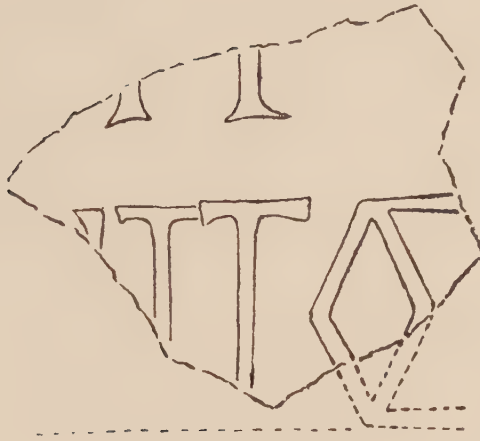


FIG. 131. Full size.

This uncommon contraction occurs in the word ΚΣΜΟΥ in a late inscription from Smyrna which has been referred to the third century A. D. Cf. Chandler, *Marm. Oxon.* No. xxxv. The square ◊ is recorded from several inscriptions from Cumae and Misenum, *C. I. G.* Nos. 875, 863, 866.

Letters $1\frac{1}{5}$ inches high, incised in a marble fragment $\frac{5}{8}$ inch thick, found at the Gaiola, and now deposited in the Ashmolean Museum at Oxford.

17.

ΑΠΟΛΛΩΝΙΟΣ ΑΜΜ · ΑΛΕ
ΣΕΒ · ΚΡΙΣ · ΠΑΝΚΡ
ΣΕΡΑΠΙΩΝΠΟΠΛΙΟΥ · ΑΛΕ
ΑΠΟΒΑΤΑΣ
ἌΠΟ ΣΤΟΥΜ · ΙΣΙΔΩΡ · ΑΛΕ
ΥΡΙ< ΦΟΞ ΠΕΝΤ

Found at the Villa Maza. It refers to certain Neapolitan games, perhaps the Augustales quinquennales. *C. I. G.* 754.

18.

ΑΡΙΣΤΟ ΒΟΥΛΕ
ΧΡΗΣ ΤΕ
Χ ΑΙ ΡΕ

Ἀριστόβουλε χρηστὲ χαῖρε

Seen on a piece of sculpture representing a seated youth playing with a large bird at the Villa Gibot at Mergellina by F. von Duhn in 1877. *C. I. G.* 768.

19.

ΜΕΛΙΘΩΝΙ
ΠΑΙΔΙ · ΑΓΑΘΩ
ΙΗΣΑΝΤΙ · ΕΤΗ
ΙΗ · ΟΔΙΔΑΣΚΑ
ΛΟΣ

Μελίθωνι παιδί ἀγαθῶ ἤσαντι ἔτη ἡ' ὁ διδάσκαλος.

Found at 'Villa Vedii Pollionis' on Posilipo. *C. I. G.* 798.

20.

ΦΙΑ

Letters $1\frac{5}{8}$ in. high, cut in marble with grey veins, $\frac{2}{5}$ in. thick. Gaiola.

BRICK STAMPS



FIG. 132. BRICK STAMPS. Nos. 1, 2. Half size.

1.

Pentagon in a circle.

Upper Thermae, *G.*

Impressed on bricks $1\frac{1}{4}$ inches thick.

A similar impression of the pentagon or *sigillum Davidi*, though impressed by a coarser mould or die, has been recorded from Selinuntum. *Atti R. Accad. Linc.*, 1885, p. 41, fig. 65.

2.

M · VE · RON · AN

A caduceus.

Odeon, *F. G.*

On large bricks, $1\frac{1}{8}$ inches thick, and also on round bricks in the columns of the portico of the Odeon. Similar stamps occur on bricks used in repairs to the tunnel of Sejanus. The inscription is given as *M. VETRONIUS* by Panvini; but the reading of Mommsen, *M. VETRONI ANTH(1)*, is the most probable. Cf. *Bullett. Nap.* i, p. 29, 48.

3. Q · MCIAS · LEP

Odeon, *F.*

Others have been noted from bricks in the tunnel of Sejanus (*Bull. Nap.* i, p. 29, 48); catacombs of S. Gennaro at Naples (Jorio) and from lake Fusaro (Garrucci).

4. HOSTI

Impressed on bricks $1\frac{1}{4}$ inches thick.

Odeon, *F. G.*; Marotta, *G.*

These bricks were much used in the coast-towns round the Bay. They are recorded from Sorrento, Herculaneum, Torre del Greco, and from the Catacombs of S. Gennaro. The name Hostius is known from Puteolan inscriptions, and bricks made by one of them for the tombs in the Via Campana are stamped **HO 51**. The name of a member of the same family has also been found in an inscription from the Via Domitiana.

5. C · BREXI

SENCIO

Casa Marotta, *G.*

Stamp measures, $2\frac{5}{8}$ in. $\times$ 1 in. It has also been recorded from the catacombs of San Gennaro.

6. MA · DA · M

Casa Marotta.

Similar reversed stamps, reading from right to left, have been found upon bricks in the House of Mercury and in the Stabian Baths at Pompeii. The full inscription is believed to have read **M · AC · AMP · F.** Mommsen, *C. I. L.* 8042-4. It is clearly and deeply impressed.

7. FORTVNATI VINICI

Odeon, *F.* Tunnel of Sejanus. Marotta, *G.*

Tiles of this make were also used at Sorrento, at Pompeii, and in the Pontine Islands.

8. ▶ CN AVIDPM ◀

South of the Upper Thermae, *G.*

Impressed on a roofing tile measuring 23 in. $\times$ 19 in.

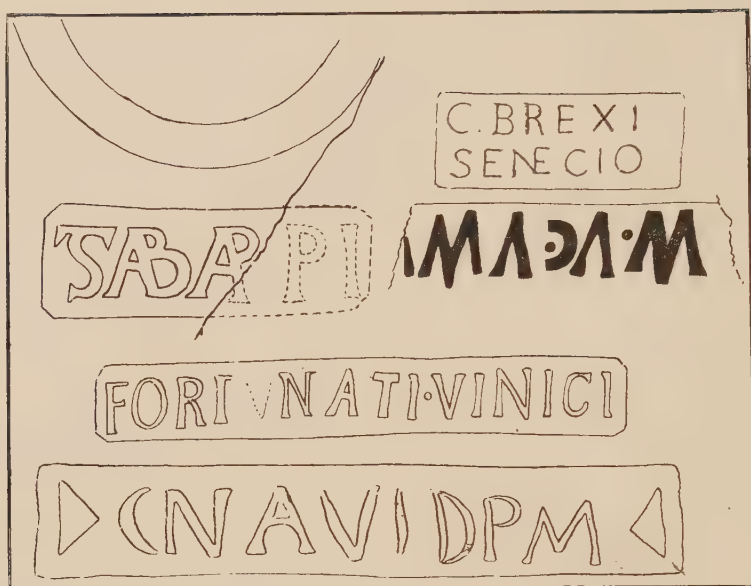


FIG. 133. BRICK STAMPS. Nos. 5-9. Half size.

9.

Semicircle of $1\frac{1}{2}$ inch radius.

SAB·API

Upper Thermae, G.

On a brick $1\frac{1}{2}$ inches thick. Similarly marked bricks measuring 25 in. x 19 in. were widely distributed and have been recorded by Schoene and Dressel, from Sorrento, Herculaneum, Pompeii, Marano, Naples, and from Forio in Ischia.

AMPHORA STAMP.

10.

C·A·N

Villa Acampora, G.

LAMP STAMPS.

11.

IVNI....

This inscription is obviously incomplete; but other lamps have been found at Nola and at Torre Annunziata stamped C·IVN·DPAC, a common inscription on Sicilian lamps, which are widely distributed in Calabrian, Sicilian, and Sardinian sites. Cf. *C. I. L.* No. 8053, 105.

12.

....EVPO

Lamps stamped C. MAR. EVPO. have been recorded from Naples, Pozzuoli, Messina, and Cagliari. And M EVPO has been found on a lamp from the Terme Nunziante near Torre Annunziata. Cf. *C. I. L.* No. 8053, 126.

ARCHITECTURE

COLUMNS

MARBLE SHAFTS AND BASES

The measurements unless otherwise stated are those of the diameters of the column.

1. Diam. 25 inches.

Villa Rosebery.

A base with mouldings as shown in *c*, fig. 134. The marble is superficially eroded by marine boring organisms, indicating a more or less prolonged

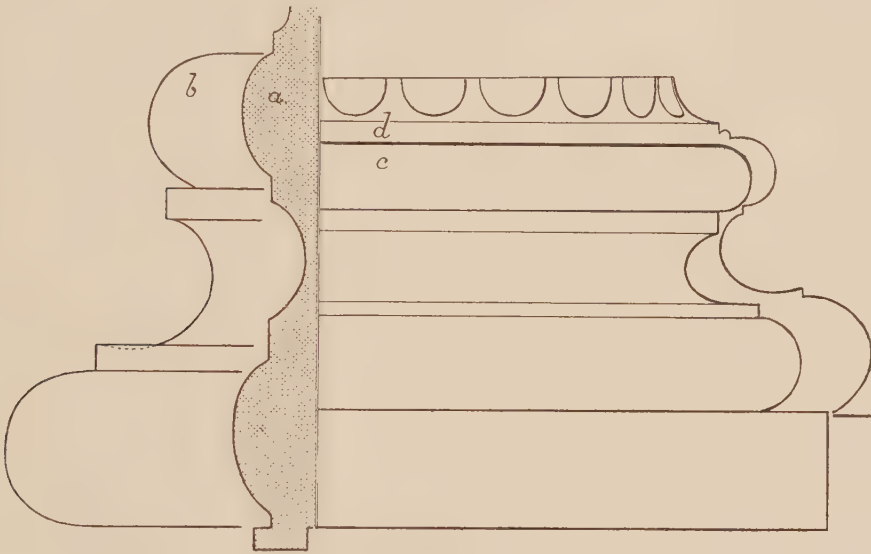


FIG. 134. *a, b.* PILASTER BASES. *c, d.* BASES OF COLUMNS.

period of immersion in the sea. It may have been dredged up in the Rosebery region, where several submerged foundations have the appearance of having been the pedestals of columns. This ancient base apparently served as the model for the bases of the columns of the façade of the Casa Principale or 'La Brasiliana', erected by Prince Luigi in his villa.

Height, $11\frac{1}{2}$ inches; base moulding, 31 inches square; superior torus, $24\frac{1}{8}$ inches in diameter.

2. Diam. 23 inches. Fig. 116. *In situ*, 'Temple of Fortune'; Marechiano.

The lower part of one of a pair of large twenty-four-fluted Cipolline columns. Up to a height of 5 feet from the base the flutes are filled with beads, like those which in columns of good proportion usually extended along a third of the height. These columns, therefore, cannot have been shorter

than 15 feet. If the height be taken as $9\frac{1}{2}$ diameters, their height would have been about 18 feet. A rough boss of marble at the back shows that the column was intended to be partly supported by a wall built close against it.

A fluted flake of the same marble, measuring 6 feet long by 18 inches broad, probably a fragment of the other column, is lying in a garden in the village; the flutes are 3 inches wide.

The **base**, 14 inches high, is of white marble, and is one of the type of Corinthian bases with a two-beaded torus round the middle, like the bases in the Pantheon or in the 'Temple of Serapis' at Pozzuoli. The plinth, 36 inches in width, still shows the centre-points for accurate centring made by the mason, as well as a mason's mark Π ; and is inscribed

Q · T · C

on the eastern side. The block would appear to have previously served another purpose, for beneath the three letters ran another inscription, of which all but an **E** has been obliterated.

The bases of the two columns were supported by two large squared blocks of piperno, which are still *in situ* on a foundation of brickwork.

3. Diam. 23 inches.

House of Pollio (1907).

A small fragment of a twenty-four-fluted column in greyish white marble.

Size 17 inches by $6\frac{3}{4}$ inches. Flutes 2 inches wide, $\frac{3}{4}$ inch deep, separated by fillets $\frac{3}{8}$ inch wide.

4. Diam. 20 inches. Fig. 134, *d*.

Villa Acampora.

Base, 8 inches high, in white marble. The lower ends of the flutings of a 24-fluted column (now missing) are continued on to and finished round the upper side of the base.

5. Diam. 18.5 inches.

Villa Acampora.

A 5-foot length of a shaft of grey marble.

6. Diam. 18 inches.

Temple.

Two shafts of dark grey marble 'not more than 12 feet in height' (*F.*).

7. Diam. 15 inches.

Bechi Estate.

A chip from the upper end of a cipolline shaft.

8. Diam. 14 to 15.75 inches.

Fixed in floor behind the altar, Marechiano Church.

A 3-foot length of the top end of a cipolline shaft, with a torus moulding 2 inches wide and 1 inch in relief. Diameter of neck of shaft 14 inches; diameter of top (including moulding) $15\frac{3}{4}$ inches.

FIG. 135. SECTIONS OF FLUTED COLUMNS. $\times \frac{1}{2}$.

9. Diam. 14 inches. Fig. 135. Stage of Odeon. (*In situ*; 1842 excavations.)

Six fluted Corinthian columns in cipolline marble were found complete with bases and capitals. One which has been moved to the terrace of Mr. Acampora's house measures about 9 ft. 6 in. in height. For about the lower third of the length, the twenty-eight flutes are filled with beads, thus producing an appearance of greater strength, a device common in Pompeian architecture. The bases and Corinthian capitals are stated to have been 15.5 inches in diameter, the capitals being 14 inches high.

10. Diam. 14 inches. Fig. 151, *f*.

Upper Thermae (1907).

The uppermost drum, 10 inches long, of a fluted white marble column.

Twenty flutes, with sharp angles between them.

11. Diam. 13.5 inches. Near Upper Thermae.
Uppermost drum of a fluted cipolline column. (Information supplied by Mr. N. Douglas.)
12. Diam. 13 inches. Temple.
A fine fluted shaft, 7 ft. 2 in. in length, of rosso antico, veined with white. A Corinthian capital of the same diameter and 18 inches in height was also found in the Temple.
13. Diam. 13 inches. Moved to the Stairway to Mr. Foley's house.
A 3-foot length of a plain cipolline shaft.
14. Diam. 12 inches. Moved to entrance of Villa Maza.
White marble; 4 feet showing above ground.
15. Diam. 10 inches. Fig. 135. Moved to Casa Marotta.
Fragment of a deeply fluted shaft, with twenty-four flutes and $\frac{5}{16}$ inch fillets between them.
16. Diam. $9\frac{7}{8}$ inches. Marechiano.
A 3-foot length of a shaft of white marble.
17. Diam. 9 inches. Moved to Villa Maza.
Two 6-foot lengths of white marble with grey streaks. One is at the entrance, the other in the garden of the Villa.
Two composite capitals of this diameter are also in the garden.
18. Diam. 9 inches. Mr. Douglas's excavations.
Alabaster; twenty-four flutes, each $\frac{1}{4}$ inch deep.
19. Diam. 9 inches. Fig. 135. Found in 1900 excavations (G.).
Fragments of an alabaster shaft with twenty-four flutes without flat fillets between. The flutes are $1\frac{1}{4}$ inches wide by $\frac{3}{8}$ inch deep, and appear to have been struck from a circle .7 inch in radius.
20. Diam. $7\frac{1}{2}$ inches. Theatre; on the second landing.
A fluted shaft of palombara alabaster, measuring 10 inches in length. (F.)
21. Diam. $4\frac{3}{4}$ inches. Moved to Signor Acampora's garden.
White marble shaft 2 ft. 6 in. long.
22. Diam. (?). Fig. 137, a. Casa Marotta.
A fragment of the lower end of a fluted column and base. Flutes of column filled with beads. Torus with wreath ornament. Base enriched with shell-and-dart ornament.

FLUTED STUCCO COLUMNS

23. Diam. 24 inches and 16 inches. Fig. 137, c.

Moved to Signor Acampora's garden.

The core of a part of two adhering columns, measuring 24 and 16 inches in diameter respectively, executed in opus lateritium.

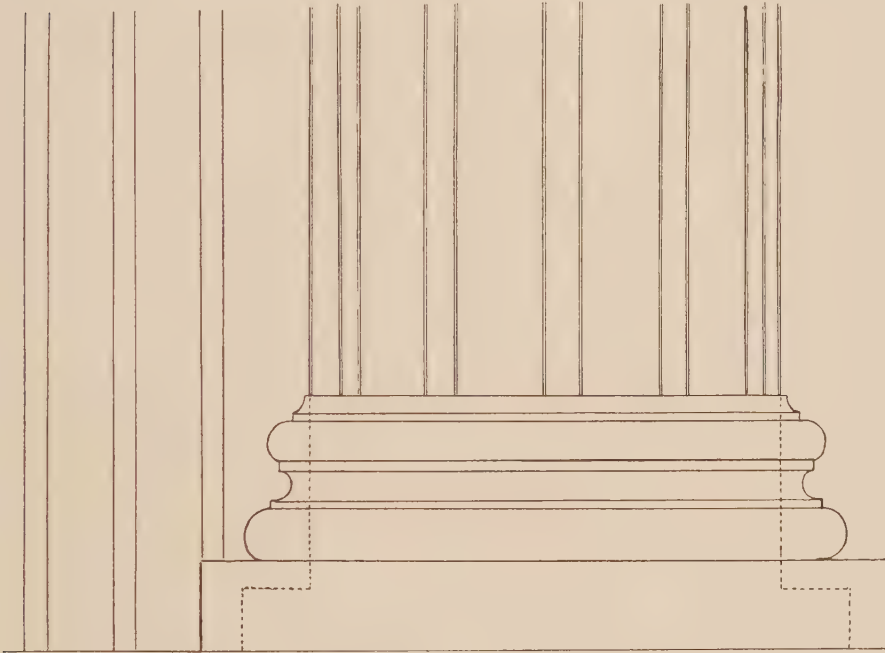


FIG. 136. STUCCO COLUMN ON THE SCOGGIO DI VIRGILIO. $\times \frac{1}{10}$.
The dotted line indicates the older work.

24. Diam. 22 inches. Figs. 85 and 136.

Scoglio di Virgilio.

A decoration of twenty-four flutings in very low relief. The bases had been moulded at two different periods. The earlier one, $2\frac{3}{4}$ inches high, square and Tuscan in style, is completely covered by the plaster of the later base, which is 12 inches high, and composite in style, the two tori being enriched with egg decoration, which has been omitted in fig. 136.

25. Diam. 22 inches.

Portico of Odeon.

At least eighteen columns with cores of opus lateritium, and probably in the Tuscan style.

26. Diam. 16 inches. See No. 23 above.

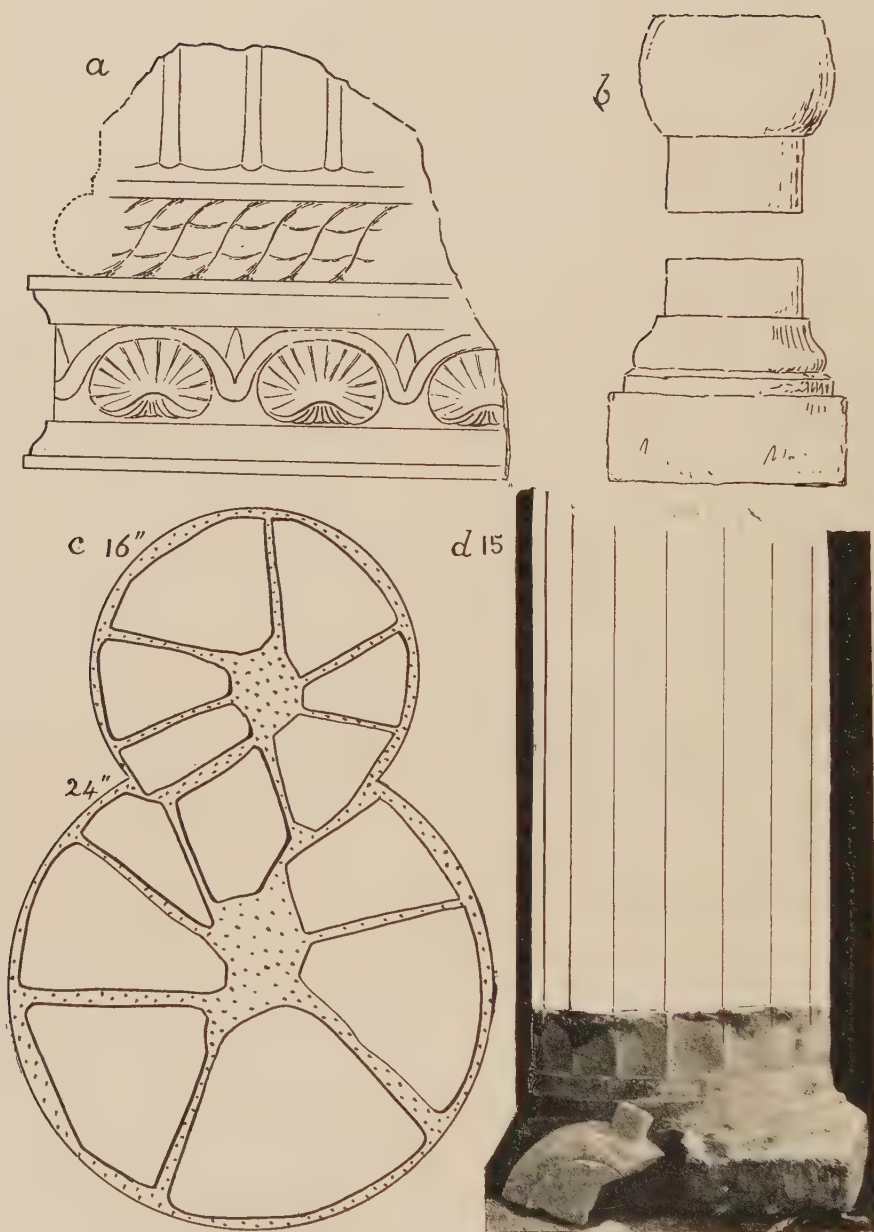


FIG. 137. *a*. MARBLE FRAGMENT.

b, c, d. PART OF STUCCO COLUMNS.

27. Diam. 15 inches. Fig. 137, d.

Scoglio di Virgilio, moved to Mr. Foley's Terrace.

Base and short length of shaft of a fluted stucco column. Base 20 inches square; flutings about 2.5 inches wide and $\frac{3}{8}$ inch deep. Numerous similar fragments were found.

28. Diam. 6 inches. Fig. 137, b.

Casa Marotta.

Base and other fragment of the rough piperno core of a stucco column.



FIG. 138. MARBLE FRAGMENTS.

CAPITALS

29. Diam. 26 inches. Corinthian capital. 1842 excavations. ? Odeon (F.).

30. Diam. 24 inches. Corinthian capital. 1842 excavations. ? Odeon (F.).

31. Diam. 21.5 inches. Doric capital. Fig. 138, c. Casa Marotta.

a. A fragment. The echinus, ornamented with usual eggs and darts, rests on a roll-and-bead moulding, which surmounts the shaft of the capital.

Above the echinus a light anthemion ornament in low relief decorates the cavetto. The maximum diameter across the top is 25 inches.

b. Below Upper Thermae, moved by Mr. Douglas to Capri.

A fragment with similar mouldings, but with anthemion ornament larger and egg-and-dart smaller than in the first specimen.

32. Diam. 14 inches.

Stage of Odeon (*F.*).

Capitals belonging to the six fluted Corinthian columns measured 14 inches (1 p. 5 o.) high.



FIG. 139. TWO CORINTHIAN CAPITALS.

33. Diam. 13 inches. Temple (*F.*).

'18 inches in height. Carved with wonderful art in white marble; the leaves being of a new and fantastic design. The bell is decorated with two thistles, with stems entwined and leaves recurved. A somewhat similar capital with thistle leaves instead of acanthus leaves is said to have existed in the church of San Giovanni a Mare, and it was compared by Fusco to the capitals of the Torre di Cereste and of the Temple of the Winds at Athens. It was also suggested that the Corinthian sprang from this type of capital, by the addition of volutes in the angles of the abacus and of tendrils near the rosettes.' *Fusco*.

[? Not in existence.

34. Diam. $11\frac{7}{8}$ inches. Fig. 139.

Moved to Isola di Gaiola.

Two Corinthian capitals of the type of those of the temple of Faustina at Rome. A.D. 141. The helices have been broken off.

35. Diam. $11\frac{7}{8}$ inches. Fig. 140.

Moved to Isola di Gaiola.

Two Corinthian capitals. A central palmette ornament has been carved in the place of the middle acanthus leaf found in the more primitive forms of the capital.

36. Diam. $8\frac{3}{4}$ inches.

Moved to Garden, Villa Maza.

Two composite capitals.

37. Diam. $5\frac{1}{8}$ inches.

Odeon (*F.*).

Corinthian capitals in rosso antico 'carved with the utmost delicacy'.

38. Diam.? Fig. 138, *b*.

Foley Estate.

Fragment of a capital?, the lower part of which was decorated with four anthemion-like ornaments. Upper part missing.

RECTANGULAR CAPITAL.

39. Rectangular capital. Fig. 142, *c*.

Garden, Villa Maza.

Acanthus leaf (olive leaf type) decoration on front and sides; back plain. Although capitals of this kind are frequently met with in Roman buildings, this is the only example known from Posilipo.

Lower surface measures 1 ft. 10 in. by 16½ inches. Height, 12 inches.



FIG. 140. CORINTHIAN CAPITAL.

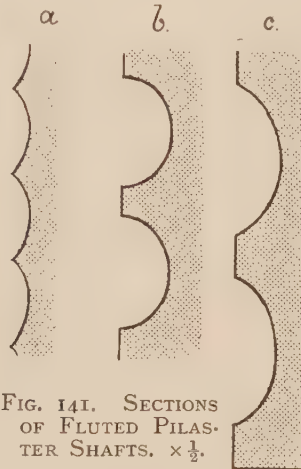


FIG. 141. SECTIONS OF FLUTED PILASTER SHAFTS. $\times \frac{1}{2}$.

PILASTERS

BASES

40. Fig. 134, *a*.

Casa Marotta.

Pilaster base, 12 inches high, with very shallow mouldings for a pilaster column of nearly 2 ft. 8 in. wide.

41. Fig. 134, *b*.

Casa Marotta.

Pilaster base, 6¾ inches high, for a pilaster column of about 18½ inches wide.

42. Fragment of a pilaster base with the palmette ornament: cf. Coner, 140.

FLUTED SHAFTS

FRAGMENTS.

43. Flutes every 2 inches. Fig. 141, *a*.
 44. " " 1½ inches (pink marble). Fig. 141, *b*.
 45. " " ¾ inch (red marble). Fig. 141, *c*.

Width of pilaster column indicated.

	If with 7 flutes.	If with 9 flutes.
	14 inches.	18 inches.
	10 inches.	13 inches.
	6¾ inches.	8 inches.

CAPITALS

46. Pilaster capital. Fig. 142, F.

Mr. Douglas' excavations.

This capital is of the same type as those over the seven-fluted pilasters at the sides of the entry into the Pantheon (Coner, 62). Capitals in a similar style found at Pompeii have been described and figured in the *Atti R. Accad. Lincei*, vii, fig. 5, p. 21, 1899.

19 inches high, 15 inches diameter [column, 19 inches imoscapo, 17.5 inches sommoscapo, 10 feet high].



FIG. 142. PILASTER CAPITALS.

47. Two pilaster capitals in rosso antico. Fig. 142, A.

Mr. Douglas' excavation in garden behind Casa Bechi.

A rare type in which two undivided leaves replace the acanthus. It is decorated with a rosette on the abacus. A similar capital from the villa Nigronia in Rome is figured by Piranesi, *Architecture*, pl. xvii, and another of the same type, though executed in painted stucco, is at the side of a niche or *aediculus* in the Columbarium of Pomponius Hylas. *Paperys B. S. R.* v, pl. xlvii.

48. Two pilaster capitals in slate. Fig. 142, D, E.

Mr. Douglas' excavation in garden behind Casa Bechi.

The lower part is decorated with three undivided leaves: above are two laterally placed flowers, but there is no central rosette on the abacus. Perhaps from the same building as Fig. 142, A.

49. Pilaster capital. Fig. 143.

A fragment of the type represented by Coner, 138 a, which was supposed to have been 'invented by the artist', by Ashby, l. c., p. 68; but the finding of this fragment is a proof of the genuineness of Coner's drawing. When perfect, our specimen probably was decorated with an anthemion instead of an acanthus: the volutes are modelled like real leaves with crenelated margins.

50. Pilaster capital. Fig. 142, B.

Garden, Villa Maza.

Acanthus leaves of the debased 'cabbage type', a type which though extremely rare in Rome, was not unusual in Pompeii.

Height, 10 inches.

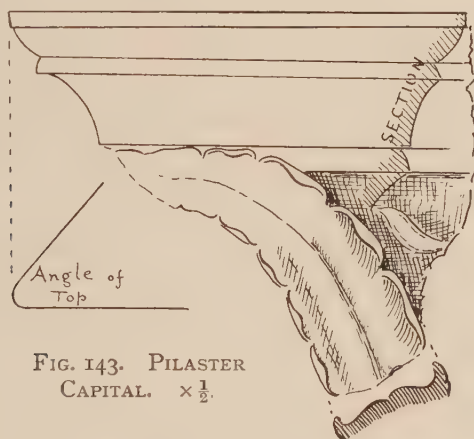


FIG. 143. PILASTER CAPITAL. $\times \frac{1}{2}$.

MOULDINGS

In fig. 144 are represented sections of the principal compound mouldings employed to set-off the marble panelling with which the walls of the more important buildings were incrustured. Next to white marble, giallo antico was the material most largely employed, but rosso antico, cipollino, purple and white marble and slate were also used. Naturally the mouldings most frequently found are simple hollows and rounds of various sizes. Flat round mouldings such as *c* were in common use as borders to flat slabs or panels.

The section of a moulding does not always give the clue to the position in which it lay, nor even serve to distinguish its upper or lower surfaces; we have, however, found it convenient to group those in which the most prominent member is an ovolo, under the head of *Base Mouldings*, and those in which it is a flat fillet as *Cornice Mouldings*. It is, however, likely that in many cases fragments included in the one or other of these two categories may have formed a part of a more elaborate composite moulding of the other group.



FIG. 144. SECTIONS OF MOULDINGS. Half size. *k-v*. CORNICE MOULDINGS. *b-g''*. BASE MOULDINGS.

A. *Base Mouldings, including those in which the most prominent member is an ovolo.*

I. Base mouldings with two prominent ovolos, with a cavetto between them.

a. Fig. 134. The ovolos project $\frac{2}{5}$ inch above and below a cavetto, from which they are separated by two fillets.

A large block with the mouldings returned at both ends was found on the Gagliardi estate; it apparently served as the base of a pilaster panel. Height, 12 inches; length, 2 ft. 8 in.

b. Fig. 144. The member between the lower torus and the cavetto is of unusual shape, being sloped like a hood-moulding in Gothic architecture.

II. Base mouldings with a single prominent ovolo or torus.

d. Torus and hollow chamfer or cavetto.

e. Torus and ogee.

f. Torus continuous with ogee, hollow chamfer or cavetto.

g. Torus distinct from ogee, " "

g'. " " " " " Bechi Estate.

h. Torus distinct from ogee; a second ogee reversed.

j. Torus, hollow chamfer or cavetto, ogee reversed.

B. *Cornice Mouldings, including those in which the most prominent member is a flat fillet.*

l, m. Flat, hollow chamfer, ogee.

In white marble and rosso antico.

Reservoir.

n. Flat, hollow chamfer, ogee with exaggerated flat.

Reservoir.

o. Flat, simple ogee. Yellow marble.

p. Flat, ogee, hollow chamfer.

Reservoir.

q. Flat, distinct from ogee reversed.

r. Flat, confluent with ogee reversed.

s. Flat, ogee, hollow chamfer, ogee reversed.

t. Flat, ogee, square, hollow chamfer.

The ogee and hollow chamfer are decorated.

Reservoir.

u. Flat, flat, ogee, flat, hollow chamfer.

y. Fig. 145, and y, fig. 148. Flat, cavetto with flutes, egg-and-dart moulding, fillet, roll and beads, ogee with leaf ornament.

i. Fig. 145. Ogee, torus, reversed ogee.

An elaborate type of cornice moulding was seen in the Garden of Villa Maza.

In it the members from above downwards are: vertical flat—ogee—dentils—square—round—square—round—square fillet vertical flat—ogee—flat (in plane of wall face). Depth, $6\frac{1}{2}$ inches; breadth, 6 inches.



FIG. 145. CORNICES, MOULDINGS AND BRACKET.

CORNICES

A 'carved cornice in white marble with brackets and rosette ornaments'.
Temple, *F*.

w. Fig. 145.

A block measuring $6\frac{1}{2}$ inches deep, and 1 ft. 8 in. long.

x. Fig. 145.

A peculiarity of this cornice is the replacement of the conventional square-

cut member by an oblique facet over cimarecta, ovolo, and dentil mouldings. The lower cima reversa is very depressed.

Depth, 5 inches.

x. Fig. 145.

Like *x*, but with the dentils altered in proportion.

z. Bracket. Fig. 145.

A debased type, thickening as it recedes from the wall line; cf. Coner, 90 a, 'in S. petro.'

DOOR JAMBS

Six broken door jambs in African marble, 13 inches wide, were found in the Temple (*F*).

ARCHITRAVES

a. 'Architrave of African breccia.'

Temple, *F*.

b. Fig. 146.

Architrave, 1 ft. $1\frac{1}{2}$ in. high by 2 ft. wide by 3 ft. 3 in. long.

An architrave of this depth may be taken to indicate a frieze and cornice in the proportion—architrave 5 : frieze 4 : cornice 6, or of 1 ft. $1\frac{1}{2}$ in. : 11 in. : 17 in. The fasciae are not carved for a distance of about 11 inches from the right end. The upper moulding consists of a square fillet and a cyma carved with a running ornament derived from the Lesbian Cymation, with acanthus-leaf notching, on the Roman heart-leaf ornament (Type II of von Soldern, *Formenlehre*). The three primary divisions separated by roll-and-bead ornaments are in the proportion of 10 : 8.5 : 8.5. This fine block of white marble is a sure indication of an important building: it may be the 'pediment' referred to by Fusco. It is now lying on the Vineyard Site above the Scoglio.

c. Fig. 146.

Architrave, 12 inches high by about 4 inches wide.

Marotta.

The principal divisions are in the proportions of 12 : 10 : 8, cut in a block of black marble with red veins.

d. Fig. 146.

Architrave, $9\frac{1}{2}$ inches high; 9 inches wide.

Two blocks, Gaiola.

Mouldings as in *b*, but the decoration on the cyma of the upper moulding is elongate leaf-and-tongue. Underneath the sunk panel-soffit, characteristic of the Corinthian style, is 2 inches wide, and is surrounded by an ogee moulding. Principal divisions in the proportion of $5 : 8\frac{1}{2} : 6\frac{1}{2} : 4$.

e. Fig. 146.

Architrave, 10 inches high.

Villa Bechi.

Upper moulding of $\frac{3}{4}$ -inch fillet over egg-and-dart, $1\frac{3}{8}$ inches. The principal divisions in the proportion of $5 : 8\frac{1}{2} : 10$.

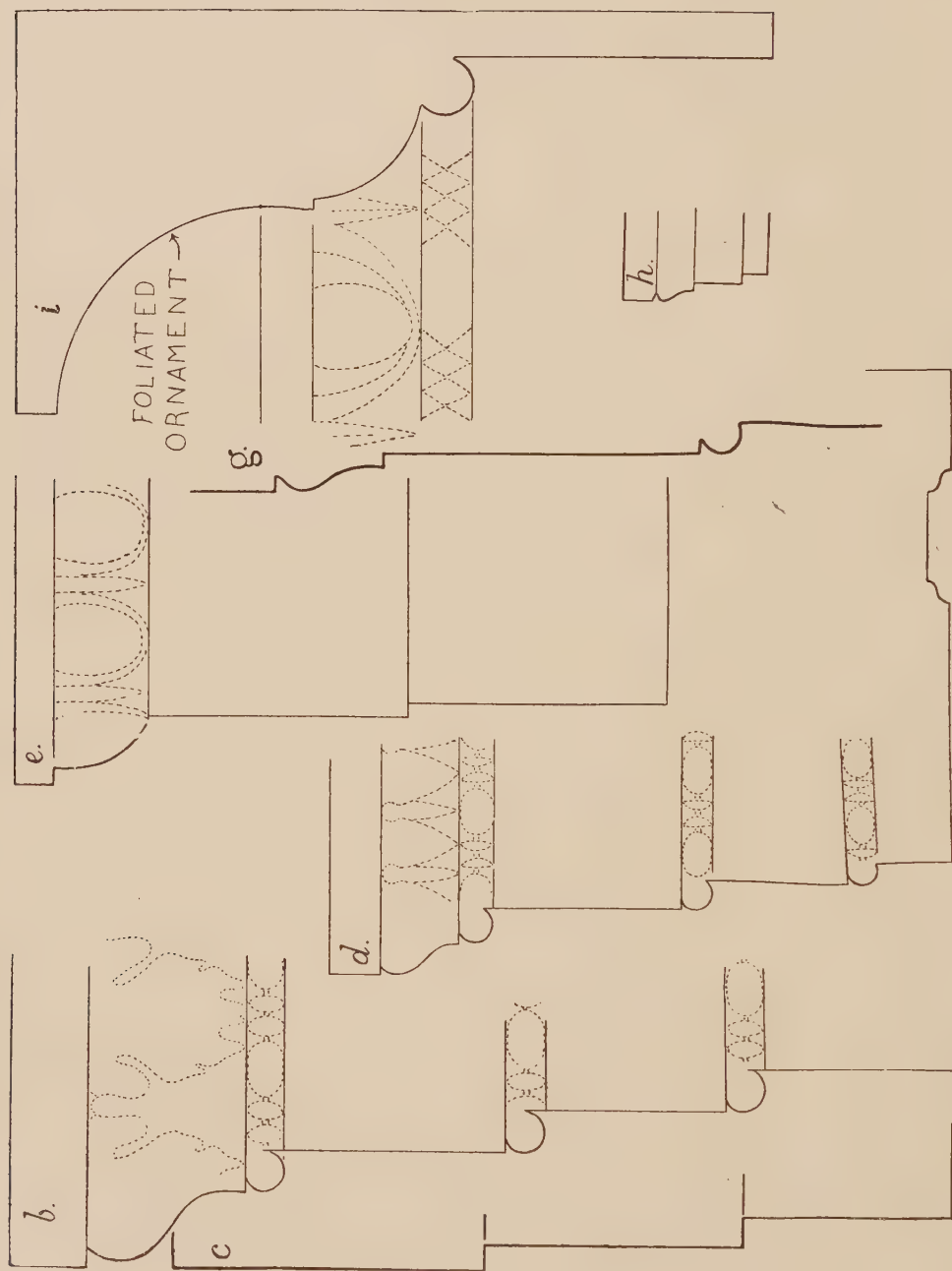


FIG. 146. ARCHITRAVES. $\times \frac{1}{8}$.

ARCHITRAVE PANELLING

f. Architrave panelling.

Gaiola.

Upper moulding, plain ; two fasciae divided by uncarved beads.

g. Fig. 146.

Architrave panelling, 12 inches high, 16 inches run. Two fasciae separated by uncarved beads.

h. Fig. 146.

Architrave moulding, probably for a small niche, with two fasciae.

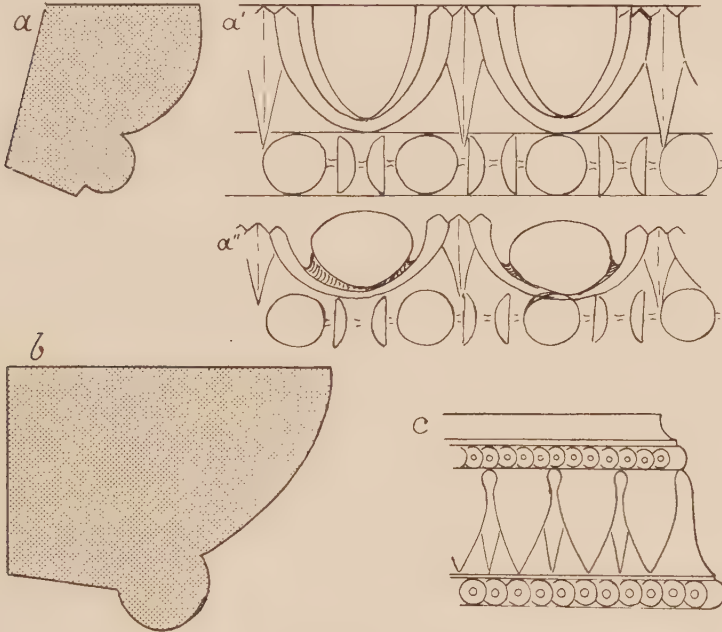


FIG. 147. ORNAMENTED MOULDINGS. $\times \frac{1}{2}$.

i. Fig. 146.

Upper moulding and upper fascia of an architrave panel, 12 inches high, perhaps from over a door. The bold cavetto is ornamented with a foliage pattern repeated every 18 inches, above an egg-and-dart, bead and a flat. This rather unusual design for the upper part of an architrave finds a parallel in Trajanic architecture in the cornice over the doorway of the *thermae* of Trajan, wrongly attributed to Titus ; cf. Coner, *Papers*, B. S. R. ii, pl. 91.

MOULDING ORNAMENTS

i. **Dentils.** Fig. 145.

This ornament occurs exclusively in cornices. In the more ornate types of cornice it may be introduced in a material different to that of the rest of the cornice. In the Pausilypon Site a dentil course of slate was occasionally used.

ii. **Egg and dart.** Fig. 147.

This ornament is frequently found worked on narrow slips of marble, wedge-shaped in section. It occurs in two sizes, 2 inches and $2\frac{3}{8}$ inches deep respectively, with an overhang of $2\frac{3}{4}$ inches.

iii. **Roll and bead** with elongate rolls. Fig. 148.

This ornament also occurs in 2-inch and $2\frac{3}{8}$ -inch sizes.

iv. **Bead ornament** with spherical rolls. Fig. 147.

Employed to divide architrave fasciae.

v. **Tongue and dart** between two rows of overlapping platelets. Fig. 147.

The decoration of a base moulding.

Casa Marotta.

A similar ornament is depicted beneath a guilloche moulding in Coner, 157.

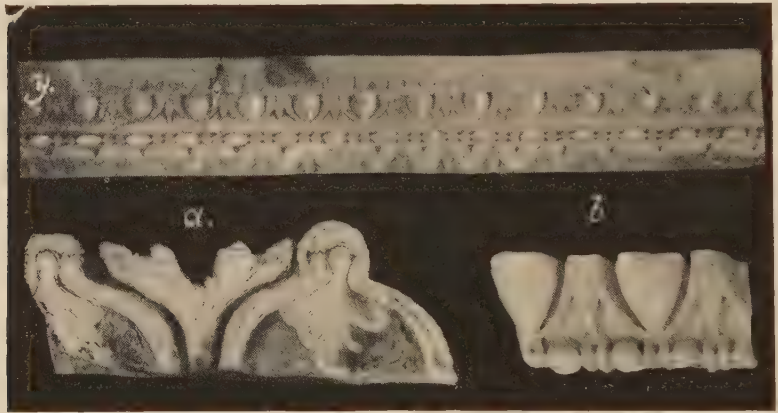


FIG. 148. ORNAMENTED MOULDINGS.

vi. **Heartleaf.**

The two extreme types, fig. 148, *a* and *y*, both occur.

vii. **Shell and wreath.** Fig. 137, *a*.

Casa Marotta.

On a square plinth, the edges of which are ornamented with a shell border in relief in a sunken panel, stands a fluted column with the flutes filled with convex beads. A wreath border is carved between the plinth and the column. The design is a simplified type of Coner, 124, 'a tibure' of which the provenance was unknown.

PLASTER MOULDINGS AND CORNICES

a. Fig. 149.

Malatesta Headland.

A very elaborate series of small torus mouldings interrupted by two flat bands. The mouldings were probably painted.

b. Fig. 149.

Near the Reservoir.

This coloured fragment of a cornice is peculiar on account of the waved edge of the fillet.

c. Fig. 149.

House of Pollio.

The cornice of the painted room of the House of Pollio already described on p. 69.

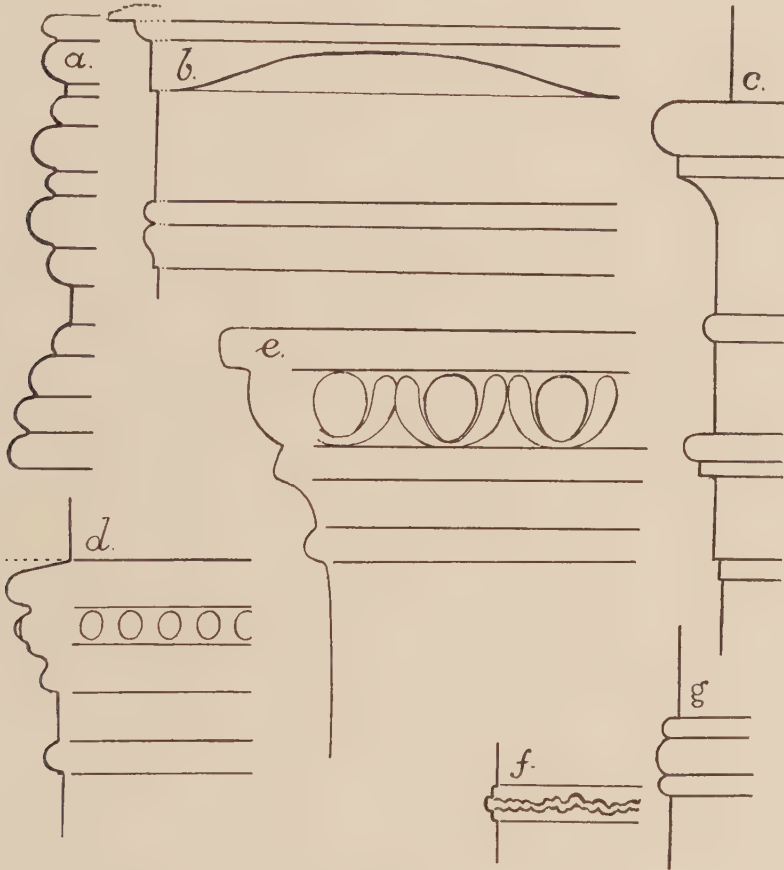


FIG. 149. PLASTER CORNICES AND MOULDINGS. $\times \frac{1}{2}$.

d. Fig. 149.

Fragment of a cornice with the middle moulding decorated with eggs, probably a degenerate type of such a cornice as *e*.

e. Fig. 149.

Fragment of a cornice with a debased egg-and-dart decoration, stamped upon plaster.

f. Fig. 149.

A fragment. Perhaps the lower member of a cornice.

g. Fig. 149.

A fragment. Perhaps the lower member of a cornice.

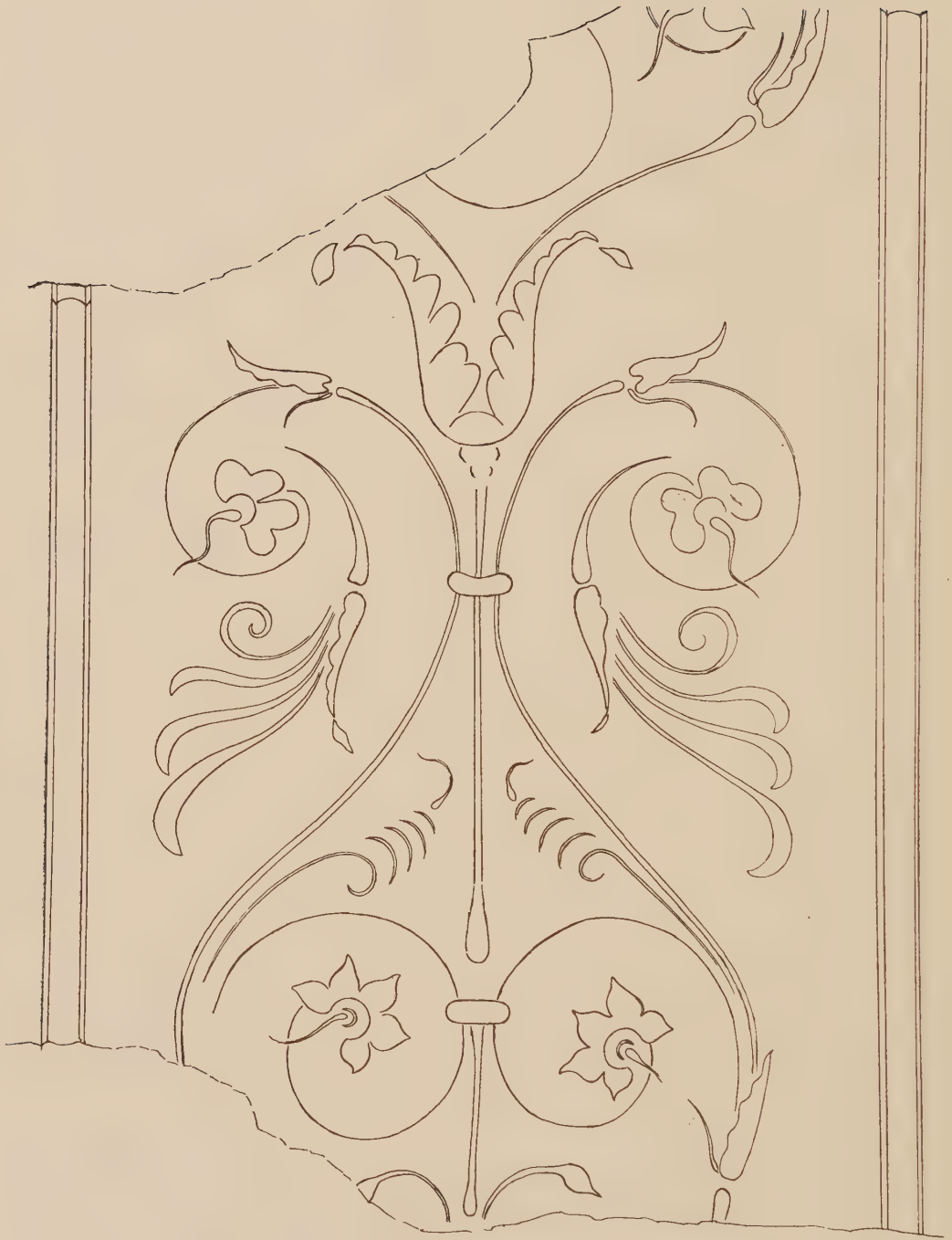


FIG. 150. PANEL WITH INCISED ORNAMENT.

INCISED SURFACE-ORNAMENT FOR A MARBLE PANEL

A foliated decoration has been delicately chiselled in white marble between two parallel bead mouldings, 11 in. apart. The design is taken from the passion-flower treated conventionally, the long slender stems being curved round the flowers, which together with the spirally-wound tendrils are unmistakable. The arrangement of the leaves indicates that the panel was intended for an upright position. The slab is $2\frac{3}{4}$ in. thick and measures 2 ft. long by 20 in. broad. Somewhat similar conventional designs are known from Pompeii; cf. Mazois II, pl. xl, and the passion-flower design upon a painted architrave in the Casa della seconda fontana, Niccolini, pl. vi.

BUILDING CONSTRUCTION

The information about the date of a building which may be derived from an occasional brick impressed with the brick-maker's stamp, is not as conclusive as might at first appear, because much of the building material is no longer in its original position, but has been taken from other buildings pulled down at an earlier period. All brick stamps which have hitherto been found may be referred to an early period.

Evidence from the actual construction of walls and from the relative thickness of bricks and mortar joints is also probably less trustworthy than was formerly believed. Walls faced with opus reticulatum, with angles formed of blocks of tufa, have been stated to belong to an earlier period than walls in which the reticulate work is framed in brick jambs and is broken into panels by horizontal courses of brick, a style which was in general use during the Hadrianic period. On the other hand, walls built of alternating layers of tufa lateritium and brick have been attributed to the fourth century. But our confidence in the strict applicability of all rules has been shaken by the statement that all three styles of building were employed simultaneously within the confines of a single villa, that of Hadrian at Tivoli.¹

Opus Reticulatum.

In reticulate work the masons squared the faces of the blocks with tolerable exactitude, but the 'tails' of the blocks which were imbedded in the concrete of the wall were usually roughly pyramidal, to key the better into the cement. Within the limits of our site we noted two varieties of reticulate wall-facing which differed in the size of the blocks.

a. Blocks trimmed $3\frac{1}{2}$ inches square on the face. These were in general use; the surface being usually plastered.

b. Larger blocks $4\frac{1}{2}$ inches square on the face. A good specimen of this kind of work is to be seen in House XXIX on the north side of the Gaiola Channel.

Reticulate work was almost invariably executed in tufa stone in the Pausilypon. The only exception to this which we observed was in the

¹ Winnefeld, *Villa des Hadrian bei Tivoli*, 1895.

semicircular back of the furnace *m* of the Upper *Thermae*, where, at one yard above the floor, a row of six red bricks cut to the size of the tufa blocks had been introduced among the reticulate courses of which the flue is built. But this case is unique.

Brickwork.

The angles of reticulated walls were generally formed in red brick, though occasionally tufa was employed instead. That both methods were in vogue contemporaneously is indicated in the construction of the *Odeon*, where both styles occur in building which appears to be all of one date. There the brick ashlar at the corners is worked in six and thirteen courses alternately, measuring 11 inches and 25 inches respectively, or $1\frac{3}{4}$ inches per course. The tufa ashlar in the little rooms below the auditorium is worked in three courses, $12\frac{1}{2}$ inches thick or $4\frac{1}{4}$ inches per course.

Brick *lateritium* alone was employed for the apse of the *Odeon*, for the columns and jambs of the *Temple* and *Belvedere*.

By a skilful alternation of courses of tufa and of brick, very pretty effects of 'wall-face' decoration were obtained, probably by slave labour; but inasmuch as this beautiful work was destined to be immediately hidden under a few coats of plaster or slabs of marble, it is not easy to understand why so much time and trouble should have been devoted to unseen work which was of but trifling structural significance. Certain it is that the modern Neapolitan *massoni formatori* are among the most skilful and conscientious of craftsmen: perhaps they owe it to ancestors who served their apprenticeship at reticulate work.

In several walls the angles are formed in *opus mixtum* or *compositum* in which courses of brick and tufa alternate regularly. Examples of this may be seen in the buildings enumerated below, in most of which, as in *Hadrian's Villa* at *Tivoli*, it is difficult to refer such work to an epoch markedly distinct from that of plain reticulated facing.

- a. One course of brick alternating with one course of tufa (Durm, p. 239).

Above the Lower Baths in the *Gaiola Beach*. The two courses in 5 inches.

- b. Two courses of brick alternating with one course of tufa.

Entrance to Red Room, House of *Pollio*, fig. 37, and in walls on hill-side below it.

Also in the *Temple* at *Baiae* (Durm, p. 283) and in the north side of House VIII. 2 and elsewhere in *Pompeii* (Mau, fig. 102).

- c. Three courses of brick alternating with one course of tufa.

In the construction of the *Herculaneum Gate* of *Pompeii* (Mau, fig. 108).

We have not seen an example of this at *Pausilypon*.

Tufa lateritium.

The following are typical examples of variations in the dimensions of tufa lateritium work.

- i. $2\frac{3}{4}$ -inch courses. Chambers γ and z near Upper Baths.
Above six courses of brick resting on the footing of the wall.
- ii. $3\frac{1}{2}$ -inch courses. Door jambs d , Corridor j , Upper Baths.
- iii. $4\frac{1}{2}$ -inch courses. Pier in House XXIX.
To form a jamb to $4\frac{1}{2}$ -inch reticulate work.
- iv. $4\frac{1}{2}$ -inch courses. Furnace m , Upper Baths.
Jambs to furnace door—the arch over being turned in brick.

FOOTING

An example of a wall built on a projecting footing of opus incertum covered by a course of large bricks may be seen in chambers γ and z near the Upper Baths, fig. 56.

VAULTING

The vaulting over the greater number of the rooms and substructions is of the ordinary barrel-type and of a fairly high pitch. An example of cross-vaulting over the chambers on the eastern side of the tunnel in the Gaiola Valley is the only thing of its kind here: it has been referred to the Hadrianic epoch.

POINTED ARCHES

Arches of pointed shape were occasionally built over narrow passages, as, for instance, over the channels of communication between the twin tanks of the great water reservoirs, fig. 77, and on the Marotta Hill (fig. 108). Similar arches occur in the Roman theatre at Taormina.

ROUND ARCHES

Although as part of the facing of a large mass of concrete a round arch-like arrangement of bricks or stones can have had but little structural significance, we frequently find such inlaid arches over window or door apertures, e. g. over the north door to room of the House of Pollio, fig. 37. Especial wedge-shaped arch bricks were used for the better class of work, as for instance over flue arches in the Upper Baths.

A carefully cut wedge-shaped arch stone of tufa measuring 10 in. $\times$ $3\frac{1}{4}$ in. $\times$ 2 in. was found in the House on the Scoglio di Virgilio.

BRICKS

Bricks used in the Pausilypon vary greatly both in size and thickness. The larger bricks in an unbroken condition are not very abundant, since so

many of the buildings have been constructed out of the materials of their predecessors: hence it is that in the same building more or less damaged bricks of different ages and origin are intermingled.

a. 1 ft. $10\frac{3}{4}$ in. $\times$ 1 ft. $10\frac{3}{4}$ in.

Marechiano.

The larger or *tegulae bipedales* are invariably somewhat shorter than two normal Roman feet (1 ft. = 11.6 in.), perhaps indicating that the brick-maker's 2-foot rule measured 1 ft. $10\frac{3}{4}$ in. only. The thickest are under $2\frac{1}{2}$ inches thick, those used on the Scoglio di Virgilio being only 2 inches. The smaller size (9 to 11-inch bricks) run about an inch thinner.

Many unbroken *tegulae bipedales* have been excavated at Marechiano, and being unbroken, have been found useful by the villagers for covering chimney-pots and for repairing pavements.

b. 1 ft. $10\frac{3}{4}$ in. $\times$ $13\frac{3}{4}$ in. $\times$ $2\frac{3}{8}$ in.

Upper Baths.

These large bricks, covered with two coats of plaster, were used for covering hot-air channels beneath the concentric steps of the circular hot bath-basin.

c. 11 in. $\times$ 11 in. $\times$ $1\frac{3}{16}$ in.

Lateritium construction, Temple.

Also the six bottom courses of the wall of chambers *y* and *z*, p. 120.

d. $9\frac{1}{2}$ in. $\times$ $9\frac{1}{2}$ in.

Upper Baths.

The ordinary construction bricks of the hot bath-basin.

" " " House of Pollio.

e. $8\frac{3}{4}$ in. $\times$ $8\frac{3}{4}$ in.

Upper Baths.

These bricks are grooved diagonally, , perhaps to facilitate cutting. They are employed as covers over the smaller flues of the circular hot bath-basin.

f. $5\frac{1}{8}$ inches.

Upper Baths.

Arch bricks over the semicircular flues.

BRICK STAMPS

See *Inscriptions*, pp. 216-18.

ROOF TILES

Many fragments of roofing tiles, *tegulae* (*a*, *a'*, fig. 151), may be picked up on all the sites. They were of the usual oblong shape, ridged at the sides and with chamfered corners for close laying. When laid, a good bed of mortar, *c*, was drawn along the adjacent ridges, and along this the semi-cylindrical ridge tiles or *imbrices*, *b*, were laid.

The rows of *imbrices* were ornamented with moulded finials of terra-cotta, *h*, some of which, belonging to an early type, are described on page 279.

A fragment of a roofing tile, picked up near the end of the Grotta di Sejano, has a peculiar interest in that it bears the impress of a cat's paws. The animal must have left its spoor on the moist clay, and the baking then preserved for us a further refutation of the theory of Prof. Prestwich, that the Romans did not keep cats.



FIG. 151. *a, b.* ROOF AND ANTEFIXAL TILES. *d.* PILLAR-BRICK FOR A SUSPENSURA.
e-g. MISCELLANEOUS FRAGMENTS.

BRICKS USED IN THE CONSTRUCTION OF HOLLOW WALLS OF THERMAE

Tiles with legs. *Tegulae hammatae et mammatae* (Vitruv. vii. 4).

i. Tile-legs solid and conical. Fig. 152, *b*.

Upper Baths.

The facing of the hollow walls of the hot chamber was constructed of these leg-tiles which were held tight against a plastered wall-face by iron spikes or holdfasts. Each tile was fixed by four irons hooked into four small cavities, *n*, in the tile, just within the bases of the four legs. The legs,

which are tapered or conical in shape, are 1 inch in length, and therefore ensured a hot-air space in the walls of this width.

Similar tiles measuring $19\frac{1}{4}$ inches square were used in the Forum Baths in Pompeii. A small point of difference between the two baths is that whereas the suspensura over the hypocaust at Pompeii is supported on stacks of square bricks, at Pausilypon the supports are formed of special columnar bricks, to be presently described.

ii. Tile-legs solid and square. *Tegulae hammatae*. Fig. 152, c. Upper Baths.

The tiles are rectangular, measuring 13.75×8 inches, by 1 inch thick, the legs being 1 inch long. They were used as the vertical liners for the

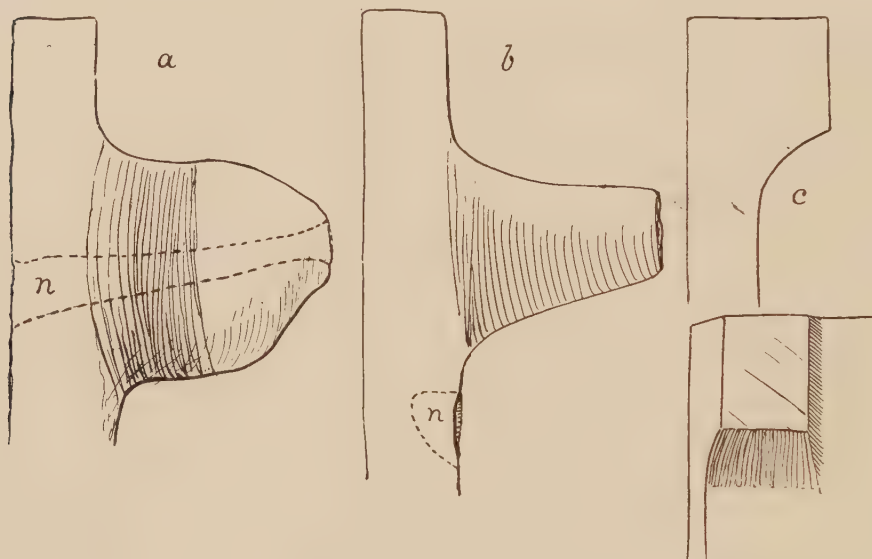


FIG. 152. LEG-TILES. $\times \frac{1}{2}$.

steps of the circular hot bath-basin. Durm, *Baukunst*, p. 187, has recorded tiles of a similar type but longer (20 inches) from some unspecified locality in Naples.

iii. Tile-legs mammilliform and perforated with small holes. *Tegulae mammatae*. Fig 152, a. Fragments found near the House of Pollio.

These tiles were about 20 inches square. The small holes, *n*, in the mammillate legs were for receiving the ends of the iron spikes used for fixing the tiles.

iv. Tile-legs cylindrical and perforated with large holes 2.2 inches in diameter.

The tiles measured 21 inches square and are $\frac{3}{4}$ inch thick. Some of the same character may be seen *in situ* in the sudatorium of a private house in Pompeii (No. 2, Reg. IV (VII), Ins. XV, Vicolo del Gallo), and others occur in a small private bathroom in the Casa del Centenario, where they have been introduced as an 'improvement', in an ordinary small room, so as to

form a hollow wall outside the original plastered and decorated surface of the wall; from which it may be clearly seen that before being used as a hot room, the room had not been heated, and had been painted yellow.

Though we found fragments of such tiles near the House of Pollio, we did not find any *in situ* on Posilipo.

Pipe-tiles. *Tubuli fictiles*.

i. Oblong flue tiles, thin quality. Upper Baths, near the cemented basin.
5½ in. × 3 in. × over 8 inches long.

ii. Oblong flue tiles, thicker quality. Lower Baths.

The construction of a hot wall by the use of hollow, oblong pipe-tiles or *tubuli fictiles* seems to have been regarded as an improvement on the use of the leg-tiles (*tegulae hammatae et mammatae*), for in the *Thermae Centrali* at Pompeii a hollow wall of the latter method of construction has actually been, at all events in part, replaced by a covering of the pipe-tiles. The positions of the original leg-tiles is indicated both by the marks of the legs on the plaster of the wall behind, and by the remains of the rusty holdfasts used to fix them. Nor is it difficult to understand the reason for the change. Hot air behind a broad wall-surface, must tend to take the shortest route upwards to the very unequal warming of the wall. One spot would get uncomfortably hot, while another might remain quite cold. By dividing up the hot-air space into a number of properly arranged parallel flues by the use of flue-tiles, far more equable heating effects could be ensured.

Hence, in the absence of strong evidence to the contrary, it is reasonable to assume that bathrooms fitted with hollow walls made with pipe-tiles belong to a more recent period than those in which the hollow walls are made with leg-tiles. And so at Pausilypon the Lower Baths on the beach would appear to be more recent than those on the hill above.

Channel tiles. *Imbrices*. Fig. 151, *b*.

Half-round tiles which do not differ essentially from the ordinary roof ridge tiles or *imbrices*, measuring 7·2 inches long by 6·4 external or 5·2 internal diameter, were used as covers for the radial flues of the circular hot bath.

Pillar-bricks for *suspensurae*. Figs. 52 and 151, *d*.

a. The *suspensura* of the circular hot bath was supported upon columnar bricks, each 1 ft. 5¼ in. high, with square ends, pierced by 2¾-inch holes, and hollow cylindrical shafts. Similar *suspensura* bricks, apparently from the same pottery, were found under a bath floor lately excavated in the Porto quarter of Naples. There they supported large tiles 1 ft. 10¾ in. × 1 ft. 10¾ in. In Pompeii the *suspensura* bricks of this type are 1 ft. 10½ in. high.

b. Pillar-bricks of a slightly different form were used for supporting a heated floor in the Lower Baths, fig. 52, *h*. They differ from those of type *a* in that their shafts are more truly cylindrical, and less conical near the ends.

PAVEMENTS

For common floors plain pozzolana cement was used, but in places where there would be hard wear, pounded bricks were mixed with the cement, forming a concrete, *opus signinum*, the durability of which is extraordinary. In fact, detached fragments of old floors of this material are so strong that even now the women of the neighbourhood search out suitable slabs for use as boards on which to wash their linen, a service which requires no ordinary powers of resistance.

Opus signinum was chosen for flooring certain of the rooms in the hot baths and also for lining the great water reservoirs.

Floors of the type called *barbarica* or *subtegulanea* by Pliny are supposed to have preceded mosaics. Marbles of great variety of bright colour, pounded into small fragments, were rammed into the cement, and when set fast were ground down to a smooth surface. Extensive examples of this were uncovered

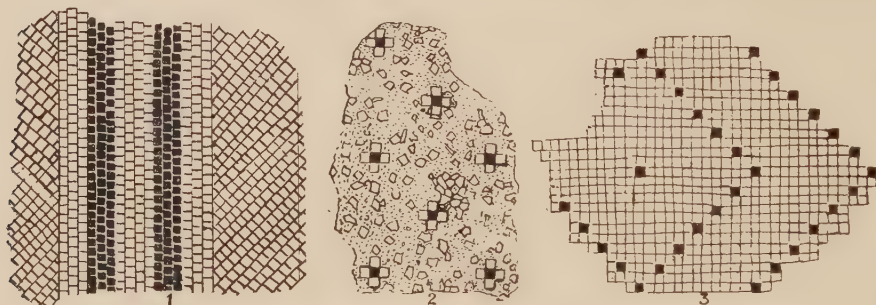


FIG. 153. MOSAIC PAVEMENTS.

in the Upper Baths, on the Scoglio di Virgilio and in the Portico of the Odeon. The marbles chosen were chiefly of light tints, giallo antico and pink marble chips predominating.

In a floor on the Marotta site, the 'barbaric' crushed marble ground was *seme* with black-centred stars of mosaic tesserae (fig. 153, 2), while another in that vicinity was ornamented with a pattern of diagonally disposed, concentric squares (fig. 153, 3).

Several specimens of the coarser forms of marble mosaic *tesselatum* were also uncovered.

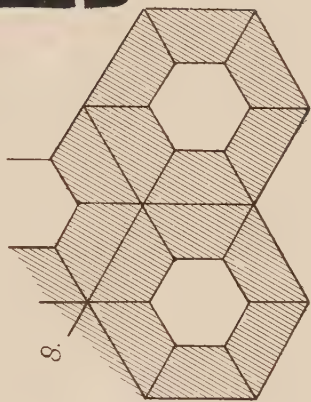
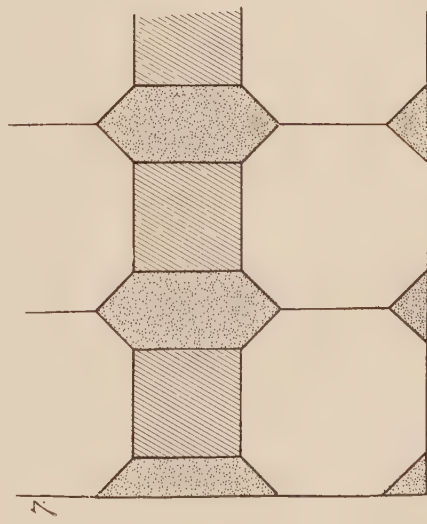
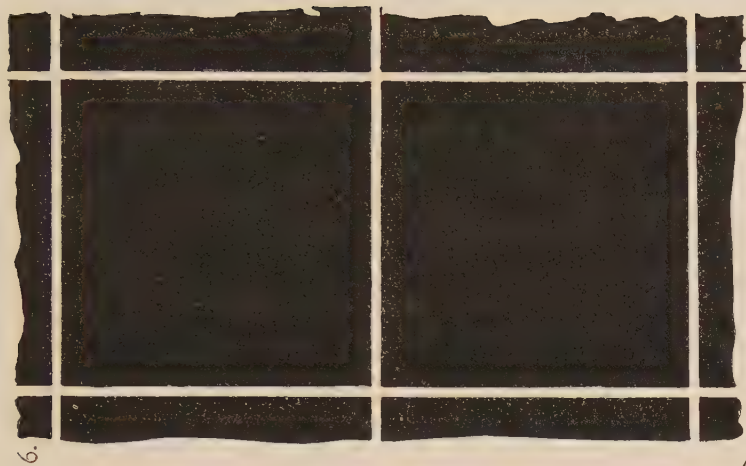
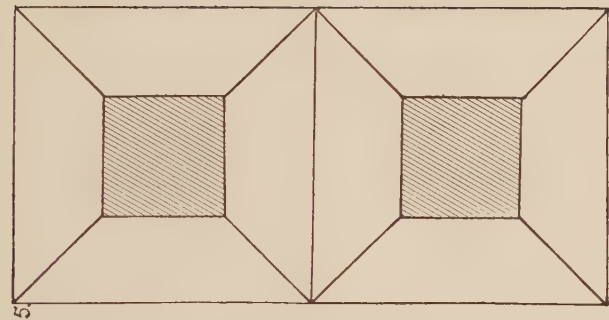
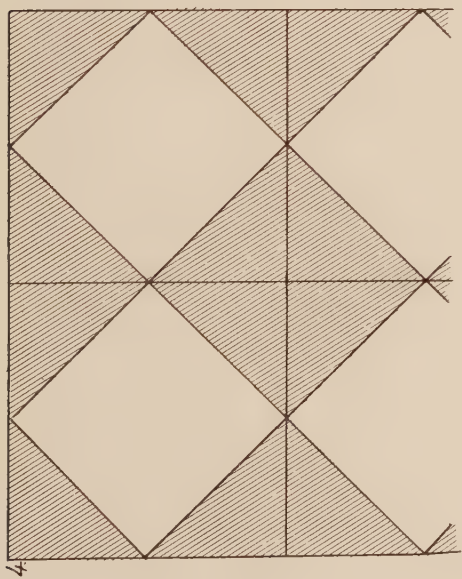
a. Tessellated pavement. Fig. 77.

Near the Reservoir.

With a simple black border.

b. Tessellated pavement. Fig. 153, 1. Furnace Room M, Upper Baths.

The white tesserae are laid obliquely across the floor inside a $4\frac{1}{4}$ -inch border of two black lines, laid $5\frac{1}{2}$ inches away from the walls. Tesserae of the border are laid parallel to the floor margin. The border is made of two black



0 10 20 30 40 50 centims

FIG. 154. MARBLE PAVEMENTS.

bands, each three tesserae in width, laid between two white bands of similar width and separated by a white band of four rows of tesserae.

Average size of tesserae is about $\frac{1}{4}$ inch square.

c. Tessellated pavement.

Room P, Gaiola Beach.

The white marble mosaic is spotted at regular intervals with single black tesserae.

d. Tessellated pavement.

Garden of Villa Maza.

Large cubes of white marble of about $1\frac{1}{2}$ inches square (relaid in parts).

e. Tessellated pavement.

A detached fragment of a floor of hard Egyptian porphyry, the tesserae measure $\frac{3}{8}$ – $\frac{1}{2}$ inch square on the face, by 1 inch in depth.

Pavimenta sectilia.

Floors paved with marble slabs appear to have been constructed of more costly materials than the floors of Pompeian buildings, and in this they were more like the floors of some of the finer houses at Baiae and Misenum. Some of the patterns of *pavimentum sectile* of which we have indications resemble some of the floors of Hadrian's Villa at Tivoli.

The following geometric patterns have been found :

a. Rectangular slabs of white marble laid in lines.

Theatre.

b. Fig. 154, 7, and fig. 151.

Relaid at Casa Bechi.

Octagons or rather squares with corners truncated of white palombino $6\frac{3}{4}$ inches across, 4-inch squares of Porta Santa, and elongate hexagons of giallo antico. The Porta Santa is sawn $1\frac{3}{8}$ inches thick, the palombara $\frac{3}{8}$ inch thick, the back of the slabs being left rough to key into the cement.

c. Fig. 154, 5.

Found *in situ*, Scoglio di Virgilio.

White palombino rhombs enclosing coloured $4\frac{1}{4}$ -inch squares.

d. Fig. 154, 4.

Relaid at Casa Bechi.

White palombino $6\frac{3}{4}$ -inch squares and pink liver cipolline triangles.

e. Fig. 154, 6.

Found by Mr. Douglas in House XXIX
and removed to his house in Capri.

Black 11-inch squares divided by $\frac{3}{8}$ -inch strips of white palombino.

f. Fig. 154, 8.

Bechi excavations.

White palombino hexagons, $1\frac{3}{4}$ -inch sides, surrounded by a hexagonal frame of red rhombs, 2 inches in width.

g. Fig. 154, 9.

Near the Reservoir.

Triangles of giallo antico, sawn $\frac{3}{4}$ inch thick.

h. Squares of granite, of 4 and 6 inches across, and $\frac{2}{10}$ inch thick.

MARBLES

The following varieties of decorative marbles have been found on the site of the Pausilypon Villa :

WHITE MARBLES.

Parian.

Odeon (*F.*).

Pentelic (From near Athens). Used for lining baths.

Palombinò (From Coraglio, Phrygia).

- a.* Equilateral triangles, 5-inch sides : $\frac{3}{8}$ inch thick : back rough.
- b.* Hexagons, $1\frac{3}{4}$ -inch sides.
- c.* Squares, $6\frac{3}{4}$ -inch sides.
- d.* Strips, $\frac{3}{8}$ inch wide.
- e.* Rhombs, 4-inch sides ; $1\frac{1}{4}$ inch thick ; back rough.

COLOURED MARBLES.

Nero Antico.

- a.* 11-inch squares.

Bardiglio (From Carrara).

- a.* Columns.

Temple.

Bigio.

Squared block, 17 in. $\times$ $18\frac{1}{2}$ in. $\times$ $23\frac{1}{2}$ in.

Marotta.

Giallo Antico (? From Numidia).

- a.* Sawn slabs $\frac{7}{8}$, $\frac{1}{2}$, $\frac{3}{8}$ inch thick.
- b.* Triangles.
- c.* Right-angled triangles, $8 \times 8 \times 11$ inches by $\frac{3}{4}$ inch thick.
- d.* Elongate hexagons.
- e.* Mouldings.

Rosso Antico (M. Taenarium from C. Matapan, Greece). Some 'rosso antico' marble may have come from Umbria where a variety of shades of monochrome marbles occur.

- a.* Slab, $10 \times 5\frac{1}{2}$ inches (Miss Bechi). Other slabs measured $\frac{1}{2}$, $\frac{7}{16}$ inch thick.
- b.* Moulding.
- c.* Block with returned moulding.
- d.* Pilaster capitals.
- e.* Capitals, 5 inches high, and fragments.
- f.* Fragments.

Odeon (*F.*).

Below House of Pollio.

Rosso d'Egitto.

- a.* Fluted column, 7 ft. 4 in. high $\times$ 13 inches diameter.

Temple (*F.*) or to east of the theatre (*R.*).

VEINED MARBLES.

Cipollino (M. Carystium from Euboea), *undosa* *Carystos* (Statius).

- a.* Six columns. Odeon (F.).
- b.* Column. Marechiano.
- c.*
- d.* Mouldings.
- e.* Slabs sawn for pavements and wall-linings $\frac{3}{8}$, $\frac{5}{8}$, $\frac{5}{16}$, $\frac{1}{4}$ inch thick.

Pavonazzetto (Phrygia).

Odeon (F.).

Porta Santa (M. Chium from Island of Chios).

- a.* Sawn slabs, $1\frac{3}{8}$, $\frac{3}{4}$, $\frac{1}{2}$, $\frac{3}{8}$, $\frac{5}{16}$, $\frac{1}{4}$ inch thick.
- b.* 4-inch triangles (Bechi).
- c.* 4-inch squares. (Foley pavement.)
- d.* $6\frac{3}{4}$ -inch squares (Bechi).
- e.* $11\frac{1}{2}$ -inch squares (Bechi).
- f.* Block, 1 ft. 7 in. $\times$ 1 ft. 1 in. $\times$ 10 in. (Marotta.)

Black Lumachella.

Base of Herm. Odeon.

Rosso Africano.

Door jambs, 1 foot wide. Temple (F.).

BRECCIAS.

Breccia Corallina.

Found by Mr. Douglas.

Breccia Africana (From the Island of Chios).

- a.* Sawn slabs $\frac{5}{8}$, $\frac{1}{2}$, $\frac{7}{16}$ inch thick.
- b.* Architrave. Temple (R.).

Breccia Africana, with a green matrix, like Marble No. 103 in the Corsi Collection at Oxford.

Slabs $\frac{5}{8}$ inch thick.

Breccia, red and grey.

- a.* 8-inch squares (Bechi).

Black and White Breccia (From Lucca-Carrara).

Breccia di Sette Basi (M. Scyrium from Island of Skyros).

Patera, fig. 178.

ALABASTERS.

- a.* Fluted columns.
- b.* Sawn slabs $\frac{3}{4}$ inch thick.

PORPHYRIES.

Red Porphyry (From Egypt).

- a.* Tessellated pavement.
- b.* Small fragments found on the Gaiola and other Beaches.

Green Porphyry (From Mt. Taygetus).

- a.* Narrow slips, probably from a pavement. Width $\frac{3}{4}$ inch; thickness $\frac{9}{16}$ and $\frac{1}{2}$ inch. Lower Baths.

GRANITES.

Grey Granite (Syene).

- a.* Thin sawn slabs for pavements. Some squares measuring 4 inches square were $\frac{5}{16}$ inch thick.

Coarse Diorite with large crystals of hornblende.

A pavement-square measures $\frac{1}{2}$ inch thick. My friend Dr. G. Prior of the British Museum, to whom I submitted this specimen, reports that it is probably of the rock described by Corsi as the Granito (bianco e nero) della Colonna, so called because the small column of the scourging of S. Prassede is of this kind. Cf. Corsi, *Cat.* 1825, p. 203, and Pullen, *Handbook*, pp. 34 and 138. The rock is rather like a diorite from Madonna di Campiglio, Tyrol, but the Romans would have been more likely to have got it from Corsica (Santa Lucia di Tallaro).

Muscovite Granite or Aplite.

Rare. A fragment from the Upper Baths.

We have not been able to trace any record of this material having been used as an ornamental stone, nor are we able to suggest its provenance. The Pausilypon fragment may have belonged to the base of a small statue.

SLATE.

Slate was employed in the decoration of the building below the Upper Thermae, both for carved capitals and for mouldings.

- a.* Carved pilaster capital.
- b.* Mouldings.
- c.* Dentil moulding.

Marble mouldings and slabs used for covering interiors were usually fixed to the walls by holdfasts of iron, which were generally securely held by plugs of marble, driven so as to wedge the iron tightly in the wall: good examples of this may be seen at the back of the auditorium of the Odeon and in the Belvedere. In many cases the walls had been previously plastered with a coating of hard stucco, which was frequently fixed the more strongly by iron nails, which projecting formed a key.

MURAL DECORATIONS

PLASTER RELIEFS

We were not so fortunate as to discover any plaster-relief decorations still *in situ*; but the finding of the three fragments, fig. 155, among the débris below the Upper Baths is strong presumptive evidence in favour of the former existence not far away of a room with decorations like those of the stuccoed ceilings in the Forum Baths at Pompeii.



FIG. 155. PLASTER RELIEFS.

The subjects represented are :

1. A faun in a somewhat bent attitude, apparently holding some object in his left hand while raising his right hand to his head.
2. Within a scroll frame, a round-faced head with ear-rings.
3. A fragment of the light foliage decoration of a narrow panel or frame.

MURAL PAINTINGS

The Ground Colours.

Red seems to have been the colour most frequently used on the walls and ceilings of the rooms in the Pausilypon. The best examples are the Red Room of the House of Pollio, p. 68, and the small rooms by the Theatre. We also find red used in several of the chambers of the Eastern Substructions and in the staircase of the House on the Scoglio di Virgilio.

As a dado 7 ft. 4 in. high, under cream walls, red was used in rooms f and g of the Upper Baths, and in the chamber z a little further west it serves as a background for a decoration of green reeds and other plants, on a dado 3 ft. high under a white wall. So also in the 'Belvedere'.

Pinkish brown was used on the passage walls of the Odeon.

Yellow was the colour chosen for the room with the circular hot bath-basin in the Upper Baths. In Pompeii it was commonly used as the background for architectural decorations, as in Niccolini, pl. xviii, and also in the architectural fragment, Fig. 157, h, to be presently described.

Cream is used as the background of several of the walls in the Upper Baths—usually above a dado.

White. The earlier scheme of decoration of the corridor j of the Upper Baths was painted on a white ground and very light in effect.

Light blue was used to colour the channels of certain water conduits near the Nymphaeum. The pigment contained oxide of copper, a colouring matter which according to Middleton, *Archaeologia*, xlix, p. 400, was also used for the rain-water channels of the Regia in Rome.

Many blue-coloured fragments of plaster were found on the site of house XXIX and on the hill-side [below the House of Pollio, together with plaster coloured a delicate shade of silver grey.

The Paintings.

No evidence has been forthcoming of the preservation of any large pictures upon Posilipian walls at all comparable with the masterpieces in Pompeii, many of which are painted life-size. But in several rooms we found traces of the former existence of small paintings in the middle of large panels. Too often a cleanly cut rectangular hole in the plaster is the only indication of a mural painting of sufficient merit to be worth looting; indeed in some cases the removal has been effected with such care as to encourage a hope that the pictures may yet be preserved in some collection of antiquities, although their provenance may not have been recorded.

1. Mural paintings, figs. 38 to 42.

House of Pollio.

The only room in which the mural paintings are preserved with any degree of perfection has already been described. They may be referred to the Third or Ornate Pompeian Style, which developed during the reign of Augustus and

lasted until about A.D. 50. In it architectural features are treated conventionally as a subordinate part of the general scheme of decoration. The upper part of the wall is covered with fanciful ornaments standing out against the open sky. In the choice of the details, a resemblance has been noted to designs of Egyptian origin, a sign of the introduction of Alexandrian art, and perhaps of craftsmen too, into Italy: the port of Puteoli was not far from the Pausilypon. Be this as it may, in comparing these few vestiges of painting on



FIG. 156. THE BATH ATTENDANT(?).

Posilipian walls with the wealth of art revealed by the Pompeian excavations, we must always remember that Pompeii was essentially a provincial city, and like the provincial cities of our own day, it followed, at a distance, the fashions set by the greater centres. Our Posilipian Villa was many steps nearer the centre of fashion!

2. Bath attendant (?). Fig. 156.

Chamber x, p. 119.

A standing figure holding out a towel (?) in his right hand. He appears to be carrying others on his left shoulder and side. If our interpretation be correct, he might have belonged to the class of *capsarii* who took charge of the clothes of bathers.



FIG. 157. FRAGMENTS OF MURAL PAINTING.

3. Charioteer.Room in the Theatre, *F*.

On a deep red background, a female figure driving a two-horsed chariot at such a pace that her tunic is flying out behind. The painting is in white and light blue. We have not seen this painting, but Fusco states that the head of the driver was damaged in his time.

4. Brown decoration on white ground (fragments). Fig. 157, *a, b*.

Upper Baths.

b. Carefully painted chest and shoulders of a man with arm extended, draped in a brownish purple mantle on a white ground.

a. Part of a decoration of brown and greyish bands and festoons, probably from the same wall.

5. Green reeds and other foliage plants on a red ground.Chamber *z*, p. 120

A dado.

6. Ears of corn, painted in cream and green on a black ground. Near *z*.**7. *a*. Yellow and olive-green conventional pattern on white ground.**Fig. 157, *g*.***b*. Yellow and pink blossoms with natural foliage.**Corridor *j*, Upper Baths.

We have reason to believe that these fragments formed part of the earlier decoration of the corridor, and that it was succeeded by No. 8.

8. Foliage and floral decoration.

In the corridor with the marble pavement, *j*, a large quantity of fragments of plaster showed that in the later period, rococo foliated decorations of a rather florid style, wreaths, garlands, and trellis-work on a cream background, entered largely into the scheme of decoration of the walls. The foliage was coloured blue, grey, and slate. Upon blue ribbons draped festoon-wise were grouped masses of red and yellow flowers in dull green foliage. Another fragment showed a series of blue, yellow, black, blue foliated ornaments upon a yellow ribbon shaded with brown, fig. 157, *c*.

9. Part of a garland of natural green foliage with white flowers on a deep yellow ground. Fig. 157, *d*.

Upper Baths.

Also red-centred, cream-petalled flowers, fig. 157, *f*, from the same locality.

10. Architectural painting on a yellow ground. Fig. 157, *h*.

Hill-side below House of Pollio.

This brilliantly painted view represents a corner of a building between architraves supported by the columns of a portico, and is skilfully shaded in tints of blue, green, yellow, and purple.

SCULPTURE

Mercury.

Sta. Maria del Faro.

The first statue found, of which we have any note, was a Mercury: with other statues of divinities, it was excavated by Antonio Paleologo in the sixteenth century (*Giordano*). It is possible that this work may be identical with the 'winged head of extremely fine workmanship' found near Santa Maria del Faro and described by Fusco. On the hem of the tunic was cut the letter Π, which suggested to Capaccio that it was the work of Polycrates and represented one of the Winds. It was purchased by Ignazio Velasco, was exported to Spain, and is now lost to knowledge.

'Emperor.'

Podere C. Brancia.

Headless, wearing the chlamys (*Giordano*).

'Many fine statues.'

Villa Maza.

Taken by the Duke of Medina to adorn his Vice-regal Villa at Mergellina (*Fusco*).

Apollo or Bacchus.

Chamber under Tribunal of Theatre.

A head of a beardless youth in Greek marble, with face and nose damaged. Hair not very thick, short and curly, and bound by a fillet (ζώνιον). Height, 8 inches. An inferior Roman work (*Fusco*).

Bearded Dionysos.

Found Jan. 18, 1873.

Gagliardi Estate, near the Grotta di Sejano.

Statue of the bearded Dionysos in veined marble. Height, 6 ft. 7¼ in. The god stands to the front with the right knee slightly bent, and the right arm (now wanting) extended to his right, probably held a thyrsos. He wears a long linen chiton falling to the ground, and a heavy himation, which passes above the body and over the left shoulder, and falls in deep folds to below the knees: he wears sandals. The head is of the bearded type, with long flowing beard. The hair, parted over the forehead, is confined by a wreath of ivy; part is brought in long tresses over the ears to a knot on the neck, while locks on either side fall loose on the shoulders. The back is flat and roughly sculptured. The flat joint and dowel-hole remain for the attachment of the right forearm. The pose is very quiet and stately. The brow is smooth, the eyebrows gently arched, eyes set far apart with clear-cut lids, the nose broad and straight, the lips rather full, serene and passionless.

The statue is a Graeco-Roman replica of a well-known work in the Vatican formerly called Sardanapalus, the name having been inscribed on it at a late period. The type has been assigned to Cephisodotos by Wolters, but it is



FIG. 158. BEARDED DIONYSOS.



FIG. 159. BEARDED DIONYSOS

more likely an almost perfect copy of a cultus figure of the later fifth century, when indeed a similar statue would appear to have been set up in the Theatre of Dionysos.

A. H. Smith, *Catalogue of Greek and Roman Sculpture in the British Museum*, vol. iii, p. 42, No. 1606; K. A. McDowall, *The so-called 'Sardanapalus'*, *J. Hell. Stud.* xxiv, p. 256, pl. x, whence figs. 158-9 are borrowed; Wolters, *Jahrbuch des Instituts*, 1893, p. 179; Roscher, *Lexikon*, i, p. 1118; Reinach, *Répertoire de la Statuaire*, ii, p. 128, fig. 6; Mansell, No. 1343.

Cantator.

Marchese del Tufo's Estate.

A man, life-size, with the left leg resting against the trunk of a tree; the right side being a little in advance. Face with prominent cheek-bones and full lips, drawn apart as if for speaking or singing. Hair curly. The nose, forearms, left leg, and end of right foot are wanting. A short tunic hangs from the left shoulder, leaving the chest and right shoulder bare: the short sleeve hangs loose, as if the arm had just been withdrawn. A snake (upper part wanting) is creeping over the tree trunk.

Sogliano, *Atti R. Accad. Lincei*, Ser. iv, iii, p. 198, 1887.

Herm.

Odeon.

Base only, cut in a rare black lumachella marble. Found in the second room on the right of the spectator from the arena. Height, 16 inches; width, 6 inches.



FIG. 160. FOOT AND ARM.

Bust.

Marechiano.

Headless, and draped in a toga. A poor work, life-size.

Bust.

Marechiano.

Headless and draped. Supported on a pedestal ornamented with a pair of dolphins. Perhaps the head of a marine divinity. Fragment. Height, 18 inches; width, 9 inches.

Foot and calf.

Marechiano.

A fragment belonging to right leg of a colossal statue. The foot was raised from the ground, with the toes pointing downwards and the heel drawn up. The modelling of the toes is careful, but that of the foot a trifle clumsy. Length, 15 inches; width, 7 inches. Fig. 160.

Arm. Fragment in two pieces.

Near Odeon.

The arm is bent at the elbow. On the inside of the forearm near the wrist is a small rough boss for support. Hand wanting. Measured from the elbow, arm and forearm are 12 inches in length. Fig. 160.

Fragment of hair.

Gaiola.

Part of the hair from the left side of a head and cheek and the point of the left moustache.

The hair of this fragment, fig. 161, *c*, hanging as it does in long straight locks, recalls the chevelure of a River God.

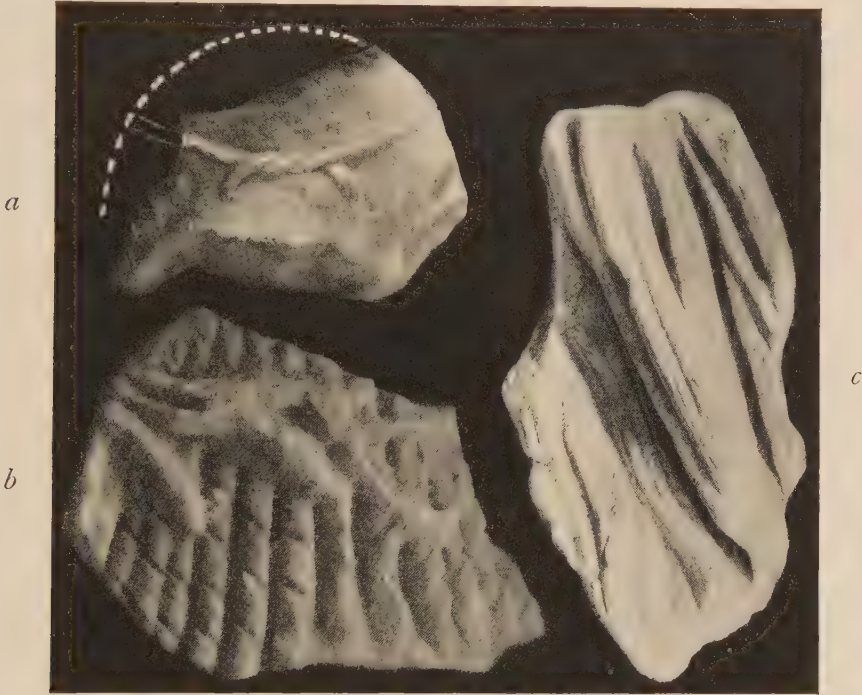


FIG. 161. FRAGMENTS OF SCULPTURE. *a* and *b*. Back and front views of the hair of a tragic mask. *b*, is rather less reduced than *a*. *c*. Part of left side of a head.

Fragment of tragic mask.

Gaiola.

A small fragment of interest on account of the chevelure. The face is entirely wanting. The hair is raised over the forehead and arranged in stiff parallel vertical curls, six or seven on each side of the middle line, to form an ὄγκος, confined by a chaplet of foliage, fig. 161, *b*, which is kept in place by a band, *philyra*, tied at the back in a simple knot, fig. 161, *a*. Back of the head roughly hewn.

It is not improbable that this band, as my friend Sir Cecil Smith has pointed out to me, may have been of metal, for no knot of this character made in any ordinary cord or textile ribbon would have kept in place.

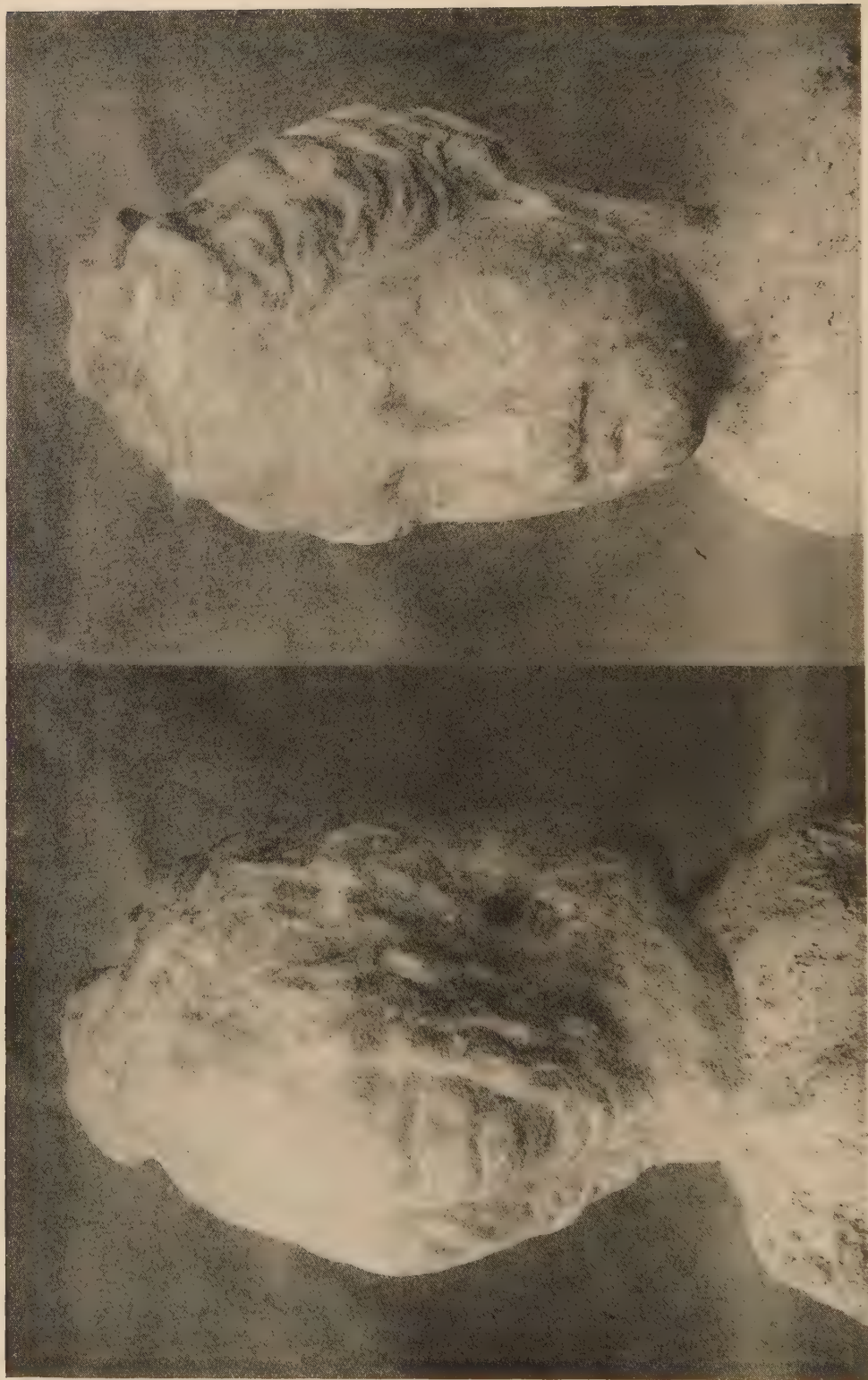


FIG. 162. HEAD OF APHRODITE (?).

Draped standing figure. Fig. 163.

Marechiano.

Headless and armless. The surface of the marble is much eroded by small holes bored by marine animals, indicating immersion in the sea for some considerable period. The toes of one sandalled foot are shown beneath the folds of the long chiton, which is much too long. The himation is caught up on the left above the waist and then spreads widely in straight folds so as to cover the greater length of the right side of the body from the shoulder to below the knee. The draping of the body is of the type represented by the statue in the Oxford Collection figured by Chandler, *Marm. Oxon.* xlvii, but far less of the figure is shown.

Head.

Acampora Estate.

Features partly destroyed ; ears concealed by hair ; hair above forehead in a thick plait, from under which the rest of the hair is brushed straight back over the crown of the head. Height, 6 inches.

Head of Aphrodite(?). Fig. 162. Casa Marotta.

An ideal female head, of interest on account of the arrangement of the hair. The hair is parted over the middle of the forehead, and with hair from the back, is brought up in ripples of considerable relief to the top, where it is fastened in a knot over the crown of the head. The hair at the back is also parted and is drawn under the tresses that rise up to form the top-knot. There is no knot at the back and no hair falls on the shoulders. Height, 9 inches.

FIG. 163. DRAPED
FIGURE.**Theatrical mask.**

Bechi Estate.

A bearded head with eyes of glass and long hair, stated to have been of poor workmanship. *Fusco.*

Tragic mask.

Gagliardi Estate.

Bearded ; the long straight hair bound with a taenia ; mouth open ; eyes pierced.

The lower third of the right side of the face is wanting. Height, 16 inches ; width, 8 inches.

Candelabra.

Odeon.

A pair in white marble : one carved with ivy leaves, the other spiral. Bases of both 'cut like leaves'.

Nereid on Pistrix. Fig. 164.

Bechi Estate; found 1840.

Acquired by the efforts of the Segretario perpetuo of the Reale Accademia Ercolanese for the Museo Borbonico; and in 1851, apparently just after its restoration by Calì, it was seen there and was thus described 'Nothing can be more poetical or more graceful. As soon as it is publicly exhibited it will take rank by the side of the Psyche, among the first remains of Grecian art' (Nassau Senior, Fellow of Magdalen College, *Journal kept in France and Italy*, for Jan. 1851).

The head, arms and right leg of the Nereid have been restored and also the head, fore limbs and hinder part of the tail of the pistrix.

Reinach, p. 411; Monaco, 64; Alinari, 11118; *Atti*, vii, p. 311.

Head of youth.

Gagliardi Estate.

Face chipped off. Lower lip and chin and left eye only remaining. Height, 9 inches.

Female head.

Gagliardi Estate.

The hair descends in wavy masses across the temple in the style of the Juno head found at Civita Lavinia and figured in *Archaeologia*, xlix, pl. 4.

Female figures.

Podere Cesare Brancia,
between Donn' Anna and Mergellina. *Giordano*.

Five headless statues. *Fusco*.

Pallas.

Villa Lucullo, Marechiano.

A statue in greenish basalt. Guattani, *Effem. letterarie*, Roma, iv, p. 322. *Fusco*.

Muse.

Near Odeon. Found by Pietro Bersani,
director of excavations, Jan. 13, 1842.

According to Fusco's description the figure was erect, with one knee slightly bent for walking: without head, right hand, toes of right foot, or left forearm. Like the Mnemosyne or Urania in the Naples Museum, she was draped in a χιτὼν ποδήρης, which comes up to the neck and falls in many graceful folds covering the feet. The sleeves are so short that they hardly reach the elbow, and are fastened by buttons as in the Thalia and Erato. Over the chiton is wrapped a skilfully folded himation, draped so as to cover the left, but to display the right side. Passing under the left shoulder, it is adjusted on the shoulder (like the Erato), it is thrown across the chest and back in two large angular folds, adorned at the end with a button, and nearly touching the hem of the chiton. Fusco considered the fashion absolutely new. The folds of the tunic resemble those of the Calliope and Polyhymnia, but 'we know of nothing to equal the folding of the himation, although the way in which it opens on the left side and the folds might be compared with one of the Pompeian paintings'. Height, 3 ft. 3 in. A Hellenistic work. (*Fusco*.)



FIG. 164. THE NEREID.

Sommer, Naples.

Triangular base of candelabrum. Fig. 165.

Acampora Estate.

This fragment shows a part of the decoration of the slightly incurved sides of the base of a candelabrum. The decoration appears to have been formed by two winged monsters with lions' bodies. The heads are wanting, but they may have been those of lion gryphons with eagles' heads, or, what is more probable, those of female sphinxes, like those on the altar¹ of the first century A. D., found in Capri and brought to this country by Sir William Hamilton. The monsters on the two sides are separated by a conventional altar. Height, $4\frac{3}{4}$ in. ; length, $6\frac{3}{4}$ in.

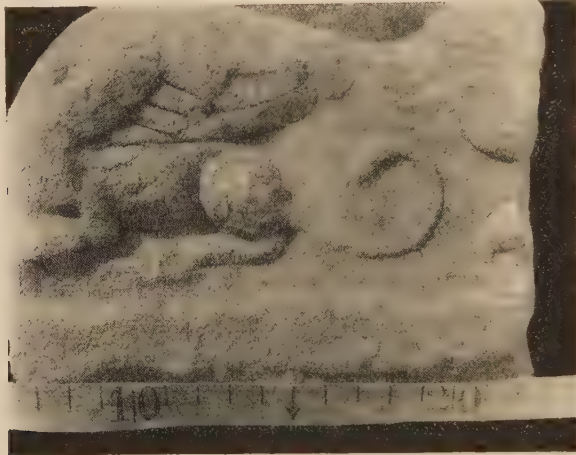


FIG. 165. FRAGMENT OF THE BASE OF A CANDELABRUM.

Table support or trapezophoron.

Gaiola.

A rudely carved head of a lion open-mouthed and gazing upwards joined to a hind leg forms the front of the support. Fig. 166. Height, 17 inches ; width, 16 inches.

Table support.

Gaiola.

At one end is carved a head of a Silenus ; over and between mouldings at the back, is a massive bracket ornamented with a moulding ending in a scroll, with a palmette projecting from the angle of the scroll. Fig. 166. Height, 1 foot ; width, 8 inches.

Sarcophagus.

Villa Maza.

A large fragment used as a puteal, fig. 167. With straight parallel sides, ornamented with S-shaped flutings and rounded ends, on one of which is a lion's head carved in relief, holding a ring between his teeth. This fine piece has served the purpose of a well-head for many years, as is shown by the depth to which the bucket-rope has cut into the marble. The piece in its present position is so built into a wall that it is impossible to ascertain

¹ British Museum, No. 2487.



FIG. 166. TABLE SUPPORTS.



FIG. 167. SARCOPHAGUS.

its exact size. Sarcophagi of similar type occur in the collection at the Louvre and at Woburn. Of interest is the relief figured by Schreiber, Pl. 69, illustrating a marble mason actually engaged in ornamenting a sarcophagus of this very type.

Panels of sarcophagi.

Marechiano.

The altar rails of Marechiano Church are made of the two sides of rectangular sarcophagi of 62 inches in length and 31 inches in height. One panel is ornamented with S-flutings, reversed on the two sides, and enclosing a shield, upon which a modern heraldic device has been carved. Along the top runs a cornice border of three mouldings, egg-and-dart, beads and dentils. The panel on the south side of the church is similar but without the border. Such fluted sarcophagi, *baccellati*, were common in the second and third centuries. (Cf. Robert, *J. Hell. Stud.* xx, pls.)

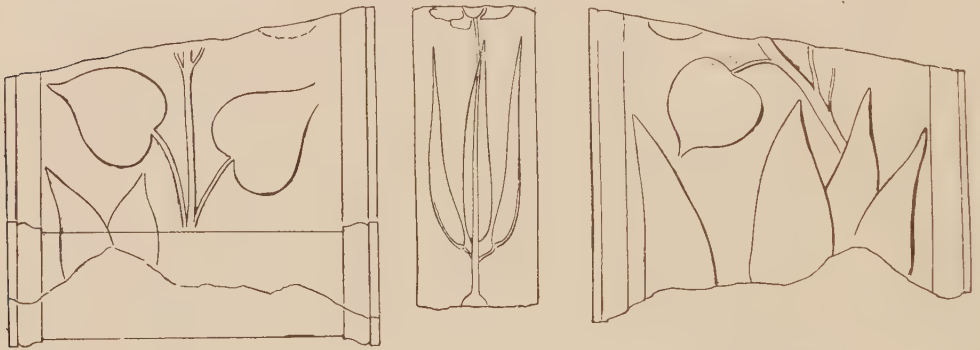


FIG. 168. FRAGMENT OF A PEDESTAL. $\times \frac{5}{13}$.



FIG. 169. THYRSUS-HEAD.
 $\times \frac{1}{2}$.

Fragment of pedestal.

Gagliardi Estate.

The pedestal was rectangular in section and decorated on all four sides with ivy and reed foliage in low relief. The two broader sides are recessed, the relief on them being surrounded by an ogee moulding. The section measures 5 inches by 2 inches.

Head of thyrsus. (A Fragment.)

Acampora Estate.

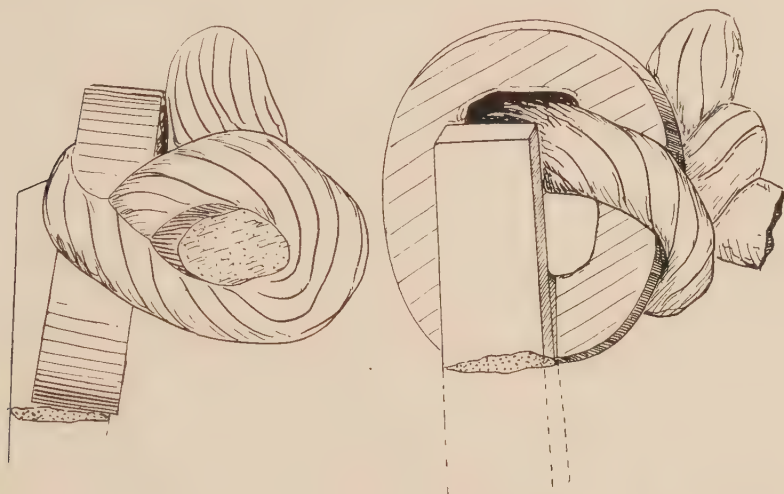
Probably the terminal cone of a Bacchus staff. White marble, 3 inches by $4\frac{1}{2}$ inches.

Ring with knotted rope. (A Fragment.)

Acampora Estate.

The end of a rope is passed once through a ring of about 4 inches in diameter and tied by a simple hitch. The ring, which is square in section and 1 inch thick, is attached to a square bar which has unfortunately been broken off short. The long end of the rope has also been broken off.

One interpretation of this curious fragment is, that it represents one end of the rope and ring to which a ship was moored. A well-known relief in the Torlonia Collection of the harbour at Ostia shows such a mooring-ring. It might also be taken as the ring of an anchor with the cable or *funis*

FIG. 170. RING AND KNOTTED ROPE. $\times \frac{2}{3}$.

anchoralis bent on. Another explanation is suggested by a recent letter of R. Engelmann to Reinach,¹ in which attention is drawn to the fact that victims were tethered to rings in the ground near the altar.

Relief. Woman and steer. Villa Maza.

A country woman, holding what is apparently a wooden staff in her right hand, is standing by the beast. Her clothing is so arranged as to leave arms and right leg bare and has been carved so as to show the figure clearly. By her side the steer, with head bent low and in the attitude of grazing, is advancing. A very pleasing work, recalling the reliefs of the Ara Pacis of the Augustan Period.

Height, nearly 4 feet; width, 2 feet.

¹ *Revue Archéologique*, 1908, p. 10.



FIG. 171. WOMAN AND STEER.

Fragment of battle frieze.

Villa Maza.

Two horsemen are riding to the right. One with thick curly hair and beard is not in armour. He guides the horse by a plaited rein with the left hand, but it is not seen, as the rider is represented in three-quarter back view. The right forearm, apparently in complete relief, has been broken off with whatever he may have been holding in his hand. In front rides a soldier in a tunic, with a short military cloak flying out behind and fixed by a brooch to his right shoulder. The right forearm is lost. The attitude is exactly that of the horseman in a Trajanic battle scene on the Arch of Constantine (*Papers B. S. R.* iv, pl. xxviii). The fragment is about 3 feet in length and might have been part of the decoration of a triumphal arch, such as we imagine to have stood at the lower end of the Gaiola Valley road.



FIG. 172. BATTLE FRIEZE.

Relief. A gryphon. Fig. 181.

Villa Maza.

The carving in fair relief is sunk between upper and lower mouldings. The monster is facing to left; the head and neck bear a crest, the under side of the throat is covered with scales. This piece appears to have formed part of a frieze or of the side of a sarcophagus.

Height, 27 inches.

Sacrificial relief.

The bull, with a broad *vitta* round the body is being led by one horn by the *popa* or *victimarius* stripped to the waist, with head bound, and wearing only



FIG. 173. PART OF A SACRIFICIAL RELIEF.

the *limus*, and carrying a *malleus* or sacrificial axe in his left hand. Perhaps part of a frieze representing the *suovetaurilia*.



FIG. 174. FOOT OF A CARNIVORE. $\times \frac{1}{2}$.

The relief is beautifully executed and reminds one of the representation found in the Temple of the Genius Augusti at Pompeii. It was stated to have been excavated on the Posilipian side of Naples and was acquired by E. Neville Rolfe, Esq. It is now in the possession of Mrs. R. Günther.

Foot of a carnivore. A Fragment.

Gaiola.

The foot, flat on the ground, is in the attitude of the hind foot of a panther or feline sphinx in a sitting position. The modelling is carefully executed.

Fragment, 3 in. $\times$ 4 in.; length of foot, $3\frac{3}{4}$ inches; base, $\frac{5}{8}$ inch thick.

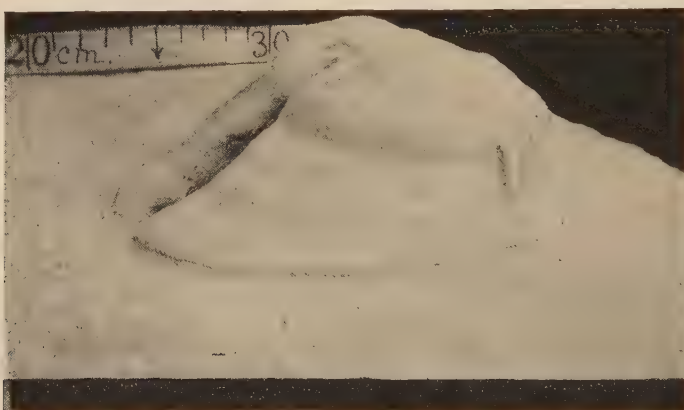


FIG. 175. HOOF OF OX OR BULL.

Hoof of ox or bull. A Fragment.

Gaiola; found August, 1907.

Part of a full-sized statue of a bovid—on a base of about 4 inches thick. The hoof, which is that of the right hind foot of the quadruped, is excellently worked and shows on the inner side a small tuft of hair. The fragment is about 1 ft. 6 in. wide.

The finding of a bovine statue upon this site is of interest on account of the close relation of Neapolis to the bull with human head, which appears on early coins and was chosen as the arms of the town. The creature has been supposed to represent Acheloos, father of the Sirens.

Marble mortar with three spouts. Two fragments. Fig. 137, *d*.

Acampora Estate.

An unfinished piece 10 inches in diameter, with three spouts. The channels had not been cut in the spouts, but are marked out by scratches on the marble. It closely resembles the painter's mortar shown in a Pompeian fresco. *Denkm. klass. Alterthums*, fig. 952.

The diameter of the base is 6 inches.

Mortar.

Acampora Estate.

Small marble mortar. Finished inside but rudely chipped to a cylindrical shape outside.

External diameter, 6 inches; internal diameter, 4 inches; height, 5 inches.

Marble basin. Fragment. Fig. 176.

Marotta.

Bottom ornamented with radiating shell-like flutes. Rim scalloped, with a half-round bead moulding, bearing a small fillet upon the upper side.

Size, 10 x 10 inches.

Marble basin. Fragment. Fig. 177.

Foley Estate.

Egg-and-dart moulding round outer side of rim with a row of beads along the upper side.

Mill-stones. Fig. 177.

Foley Estate.

Two small mill-stones of leucitic lava, the larger 15 inches in diameter and 3 inches thick, the smaller 2 inches thick.

The rock, like that of which the Pompeian corn mill-stones were quarried, probably came from Roccamonfina near the village of Cascano.

Patera. Fig. 178.

Bechi Estate.

Accurately turned in the variegated marble with brown and red veins, known as *Breccia Sette Basi*. A moulded 'wafer' or *umbo*, $1\frac{3}{4}$ inches in diameter, in relief on the bottom.

Diameter, $8\frac{3}{4}$ inches; height, $1\frac{5}{8}$ inches.

Marble Panel. Fig. 179.

Gaiola Island.

Base of statue (?). Fig. 180.

Gaiola Island.

Top with a rectangular cavity about $\frac{3}{4}$ inch deep and surrounded by an ogee moulding $1\frac{1}{4}$ inches wide.

Size of block, 21 x 20 x 10 inches high.

Pedestals. Fig. 181.

Marechiano.

A pair of tapering, fluted pedestals have been built into the side of a doorway on the south terrace of the Villa Maza. There were apparently twenty flutes in the circumference. Similar fluted pedestals were not unfrequently used to support the marble basins which received the jets of water from fountain figures—as in the case of the fountain in the House of the Large Balcony and elsewhere in Pompeii.

Height, 27 inches.

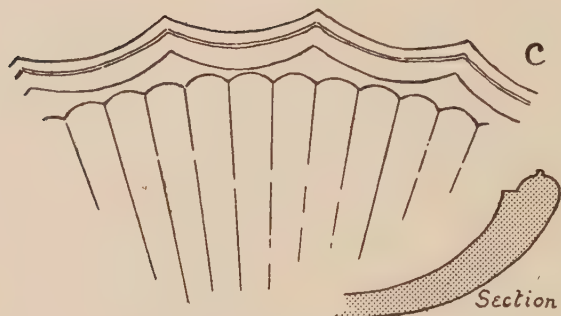


FIG. 176. MARBLE BASIN.

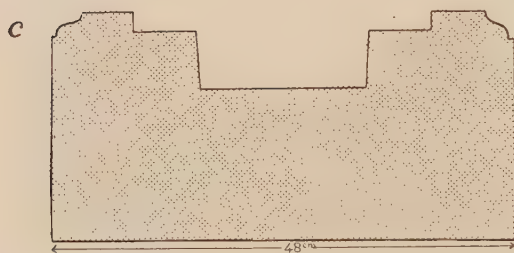


FIG. 180. BASE FOR A STATUE (?).

FIG. 179. MARBLE
PANEL. $\times \frac{1}{8}$ 

FIG. 177. MARBLE BASIN AND MILL-STONES.



FIG. 178. MARBLE PATERA.



FIG. 181. PEDESTALS AND FRIEZE AT VILLA MAZA.



FIG. 182. TERRA-COTTA STATUETTES AND MURAL RELIEFS.

TERRA-COTTA

STATUETTES.

Seated female figure. Fig. 182, *a*.

Acampora Estate.

Hands resting symmetrically on the legs, the lower parts of which are missing. A Dionysiac ivy-wreath, in the centre of which is a jewel, surrounds the hair, which is drawn back in parallel waves to a knot behind the head. Large ear-rings. A square hole in the back of the figure. Height, 5 inches. The statuette may have been made at Capua in the third century B. C.

The treatment of the drapery and other details recall the Sicilian terracottas in the collection at Syracuse figured in R. Kekulé's *Terracotten von Sicilien*. Cf. *inter alia* fig. 5, pl. xvi, for the style of hair-dressing; fig. 4, pl. xxi, for the jewel in the front of the wreath. But the face is not of so idealized a type. The illustration, fig. 182, *a*, has been compounded from two photographs, that of the head being on a slightly larger scale than that of the body.

Hercules. A fragment. Fig. 182, *b*.

Acampora Estate.

Upper part of a standing figure, cast from a good mould. Muscles, especially those of the back, well developed. Length, from crown of head to right elbow, 2 inches.

Seated figure. Fig. 182, *c*.

Acampora Estate.

Seated figure, modelled in fine paste, with hood or cucullus enveloping the back of the head, peak not pointed. Hands held on knees. An early type reminiscent of a statuette from Megara (Kekulé, l. c., fig. 3, p. 9) and also of the hooded boy found at Pompeii in 1864 in Casa di Gavio Rufo (Kekulé and Rohden, *Terracotten von Pompeii*, fig. 4, pl. xlv).

MURAL RELIEFS.

Fragment of relief. Fig. 182, *e*.

Gaiola.

Head of girl, facing to right, with thick curly hair, and ear pendant. Mr. Walters of the British Museum, who kindly gave me the benefit of his experience, considered it of early style. The pendant so closely resembles the one worn by the woman of the terra-cotta D. 649 in the Towneley Collection in the British Museum, that both must belong to the same period and it is just possible that the latter terra-cotta came from the Pausilypon site.

Fragment of relief. Fig. 182, *f*.

Gaiola.

Head of girl. Full face, thick waving hair parted in the middle, with a flower on each side of the head, recalling the fashion common among Sicilian terra-cottas (cf. Kekulé, *Terracotten von Sicilien*, pl. ix).

Trousered figure. Fig. 182, *g*.

Cistern.

Head missing. Hands at side of hips. With a hook at the back, perhaps for fixing to a wall.

Fragment of Relief. Fig. 183.

Gaiola.

Woman fully draped, kneeling to left before some object, probably a candelabrum or acanthus plant, the tendrils of which twist over the scene. The arrangement of the figure and the treatment of the toes is similar to that of the mural reliefs in the British Museum, D. 644 and D. 645, which also came from Southern Italy with the Towneley collection (cf. Campana, *Antiche opere in plastica*, pl. 110). It is not impossible that the Towneley terra-cottas may have come from this site.

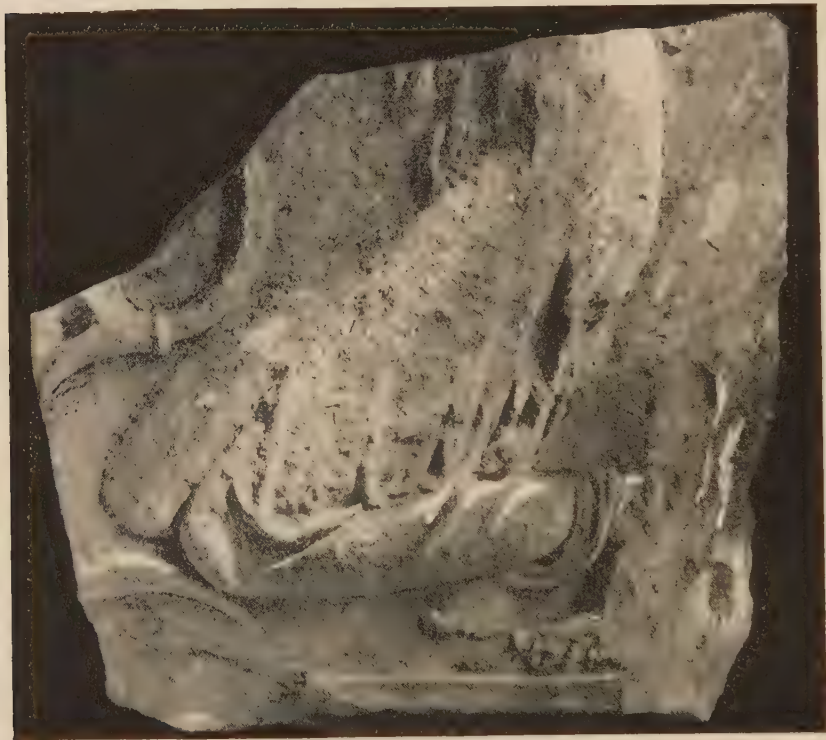


FIG. 183. MURAL RELIEF.

Fragment of relief. Fig. 185, c.

Marotta.

Head and scroll frieze.

Over a beaded moulding, a series of heads between $\complement$ and C scrolls. The relief stands out about $\frac{5}{8}$ inch.

ANTEFIXAL CRESTING OR FRONTAL TILES.

Medusa head surmounted by a palmette ornament. Fig. 184.

Between Baths and the Scoglio di Virgilio.

Palmettes not pierced. Fig. 185, *b*.

The heads probably alternated with the palmettes. Both are in rough dark red terra-cotta, covered with a cream-coloured wash, which may anciently have carried paint.

The pupils of the eyes are pitted. The hair over the forehead is heaped up on each side into two high waves, like those shown in the relief of a medusa head in Campana, pl. 100. A Gorgon antefix of a very similar type and palmette was found in Pompeii (Kekulé and Rohden, *Terracotten von Pompeii*, fig. 11, p. 15), and there is a record that a house similarly



FIG. 184. MEDUSA HEAD. Antefix.

decorated once stood on the Corso Vittorio Emanuele at Quattro Stagioni (*Atti R. Accademia Linc.*, 1885, p. 145).

Many antefixes of this nature were made at Capua.

Antefix. Fig. 185, *a*. Between Baths and the Scoglio di Virgilio.

Pierced palmette and peacock or bird with outspread wing. Part of projection at back broken.

Coarse clay, $4\frac{1}{4} \times 6$ inches.

Lower border to antefixal tile. A fragment. Fig. 185, *d*.

Between Baths and the Scoglio di Virgilio.

Part of an inverted palmette border, probably with volutes. An ornament commonly used for hanging cornice tiles (*British Museum Catalogue*, pl. xliii).



FIG. 185. ANTEFIXES AND FRONTAL TILES.

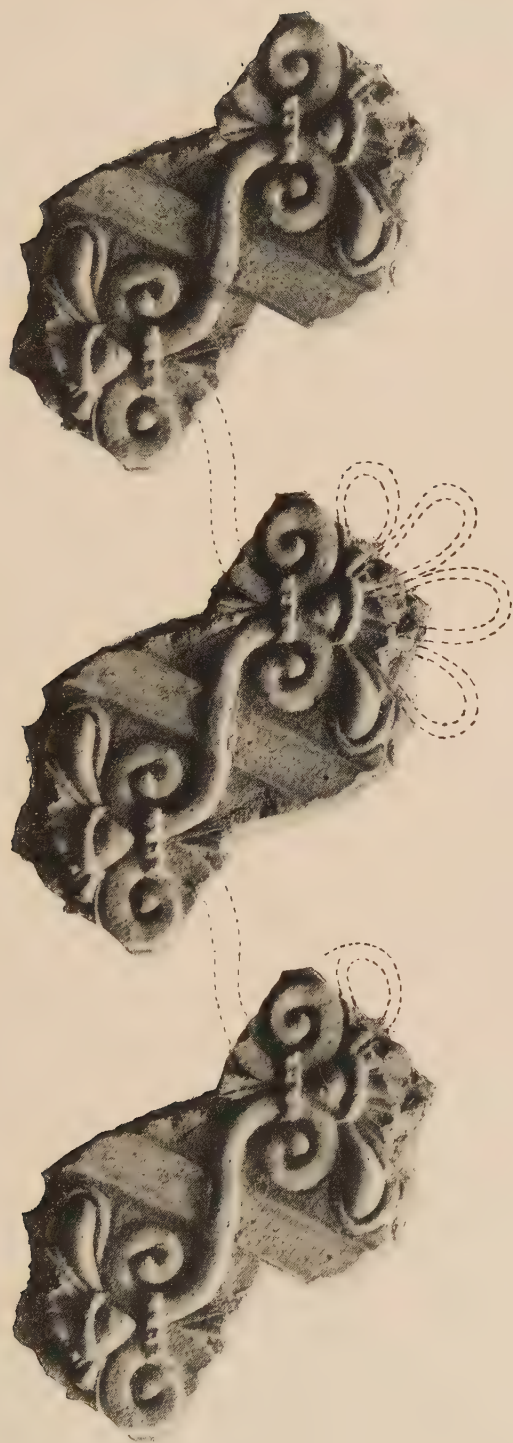


FIG. 186. FRAGMENTS OF ANTEFIXAL TILE.

Antefixal tile. A fragment. Fig. 186.

Between Baths and the Scoglio di Virgilio.

Running pattern of palmettes and a fillet or band which was probably continued round the palmettes, as in the fragment shown in Fig 185, *d*.

Lower bas-relief tile. Fig. 185, *f*. Between Baths and the Scoglio di Virgilio.

Fragment of a frieze under an elaborate cornice, comprising egg-and-dart and dentil mouldings above a row of rudely indicated triglyphs with diamond ornaments placed in between. The upper edge of the cornice is grooved for the reception of a row of tiles, perhaps a cresting of medusa-head and palmette antefixal ornaments. Coarse brown terra-cotta.



FIG. 187. CRESTING TILE, reconstructed from a Fragment.

Lower bas-relief tile. A fragment. Fig. 185, *e*.

Upper margin with egg-and-dart moulding, grooved for the reception of an upper row of tiles (Campana, pl. 38). Yellow terra-cotta.

Cresting Tile. A Fragment.

Gaiola.

Volute of about $2\frac{3}{4}$ turns. Size about $3\frac{1}{2}$ inches across. There is so close a resemblance between this fragment and those of a panel in the British Museum (D. 713) from Civita Lavinia, that we are able to restore the panel (fig. 187). The Pausilypon fragment shows deeper cutting and better work. Above is a pattern of palmettes supported on double volutes, which rest on the top of three arches, between which are projecting brackets fluted underneath; the brackets have conical tops with patterns in relief; the arches end below in volutes. The tile as restored measured 13 inches $\times$ $10\frac{3}{4}$ inches.

POTTERY.

Dolium.

Fragment of lip.

House of Pollio.

Amphoras.

Several are stated to have been found with some lamps in an aqueduct at the bottom of the valley prior to 1842.

Amphora.

Narrow neck, stamped

C · A · N

Acampora Estate.

Amphora.

Foley Estate.

Narrow neck. Height, 3 feet; maximum diameter, 1 foot.

Amphoras. Fig. 188, *l*.

Four wide-mouthed amphoras with spreading lips were found at the corners of a tomb (p. 197), more than 6 feet underground, in the bed of the Gaiola Valley. Height, 3 ft. 3 in.; diameter across mouth, 10 $\frac{1}{4}$ inches.

Two-handed vessel. Fig. 188, *h*. Cuniculus above Trentaremi Bay.

Coarse brown paste with small black specks. Height, 8 inches; diameter of mouth, 5 $\frac{1}{2}$ inches.

Pot. Fig. 188, *i*.Reddish clay. Height, 3 inches; diameter of mouth, 2 $\frac{3}{4}$ inches.**Basin.**Brown. Height, 1 $\frac{1}{4}$ inches; diameter, 3 inches.**Small cup on foot.** Fig. 188, *j*.Fine light-reddish clay. Height, 1 inch; diameter, $\frac{9}{10}$ inch.**Dish.**Height, 1 $\frac{1}{2}$ inches; diameter, 7 $\frac{1}{4}$ inches; base, 1 $\frac{7}{8}$ inches in diameter.**Saucer, black glaze.** Fig. 188, *k*.With kink in bottom. Height, 1 inch; diameter, 2 $\frac{3}{4}$ inches.**Bottle-neck.** Fig. 188, *m*.**Bottles.** Fig. 188, *g*.Two tear-bottle-shaped oil flasks, 3 $\frac{3}{4}$ inches and 3 $\frac{1}{4}$ inches high respectively.**Arretine ware.**

The two fragments, Fig. 188, *e, f*, were the only two pieces of this familiar red ware which we found at the Pausilypon. It is quite likely that ware of this nature was made somewhere in Campania, indeed Dr. Walters has suggested that there was a factory in the vicinity of Puteoli or Cumae, the produce of which was 'almost equal in merit to that of Arretium'. The date is estimated as between 150 B.C. and 100 A.D.

Bull-shaped bottle with handle. Fig. 188, *c*.Length, 4 $\frac{1}{4}$ inches.**Fragments** found in a channel under Baths with a coin of Claudius Gothicus.

The sections of the rims of two of the pots, *p, q*, fig. 189, are very like those of pottery from La Civita in the Valley of the Sabato, figured in the *Papers B. S. R.* v. p. 209.

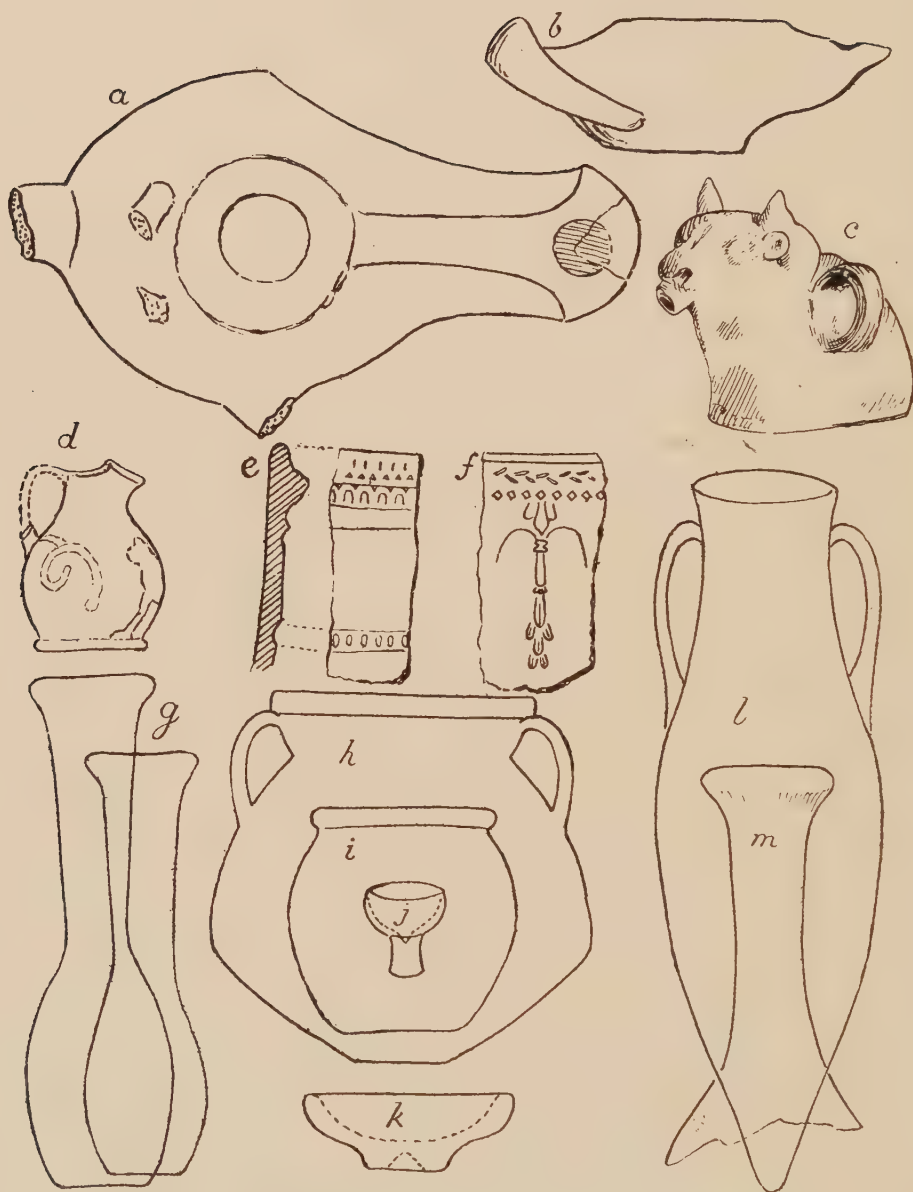


FIG. 188. MISCELLANEOUS POTTERY.

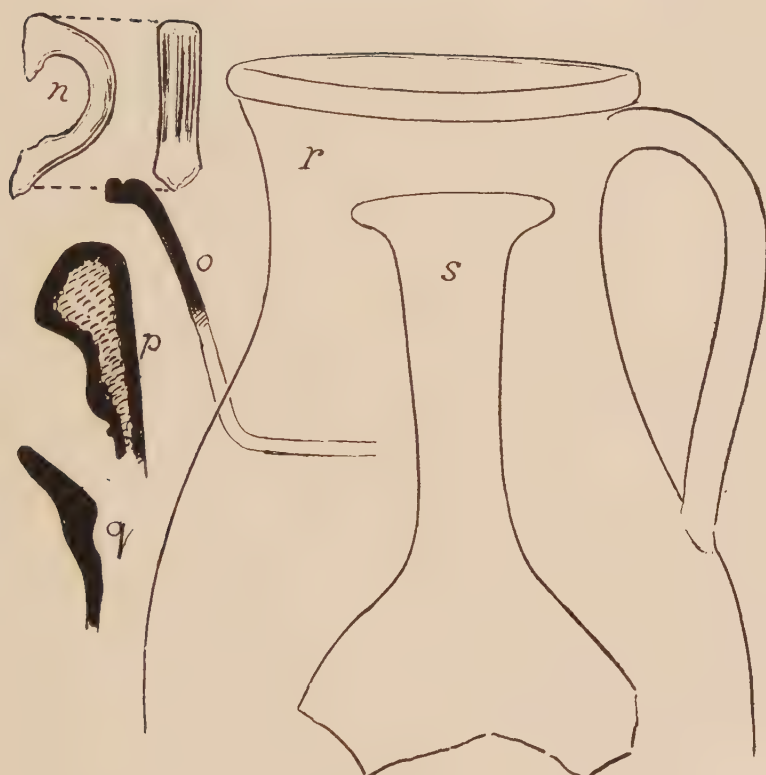


FIG. 189. POTTERY FOUND IN THE BATHS OF HADRIAN.

LAMPS.

With inscriptions :

- a.* IVNI . . . (F.)

Lamps inscribed CIVNDRAC have been found at Torre Annunziata and at Nola.

- b.* . . . EVPO (F.)

A lamp inscribed MEVPO has been found at Torre Annunziata.



FIG. 190. LAMP WITH FIGURE OF VICTORY.

- c.* ΣΩCIMOC
CTPATONI

KH Found near the Via Castellana.

Inscription on the bottom contained within a small oval $\frac{3}{8}$ inch in diameter (*Scavi*, vii, 1890).

- d.* With female scenic mask (F.).

- e.* With three goddesses (Douglas).

- f.* Delphiniform type in grey earthenware. Fig. 188, *a.* Acampora Estate.
Length, $4\frac{3}{4}$ inches. Late Republican period (*C. I. L.* xv).

- g.* ? Second-century type ; short with a transverse loop handle. Fig. 188, *b.*
Acampora Estate.

3 inches $\times$ 1 inch.

- h.* With figure of Victory. Fig. 190. Near Naples. ? Posilipo.

GLASS

1. Glass find.

Aqueduct at bottom of valley; anterior to 1842 (*F.*).

2. Glass vessel made by Ennion.

In possession of Mr. Douglas.

Upper part cylindrical, with a recessed ornamental zone bearing an inscribed tablet and an ornament of paired upright lines in relief. The bottom of the vessel was rounded and ornamented with radial flutings.

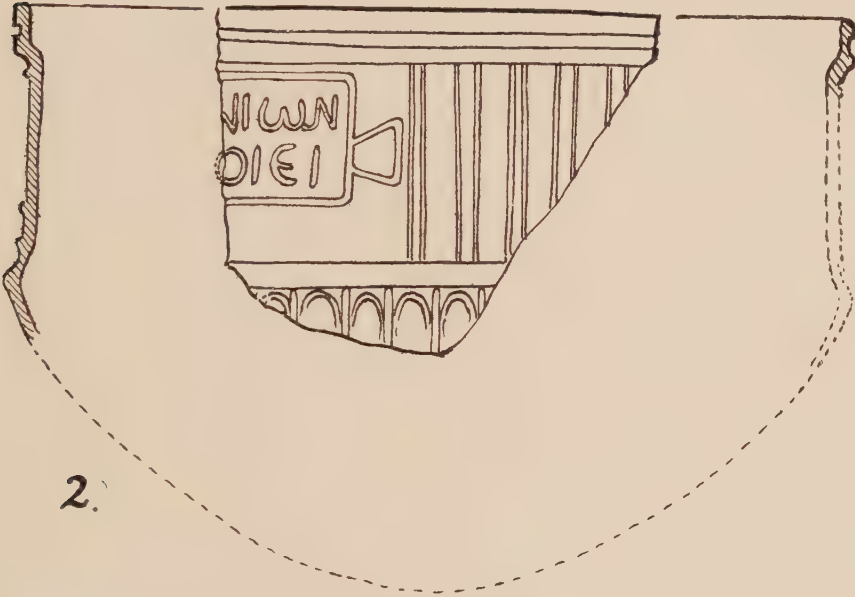


FIG. 191. GLASS VESSEL MADE BY ENNION. Full size.

The inscription:

...ΙΩΝ
...ΙΕΙ

is not difficult to restore, on a comparison with the more complete glass vessel found at Pantikapaeon, inscribed **ENNIΩΝ ΕΠΟΙΕΙ** (*Antiq. der Bosph. Cimmer.*, pl. 88; cf. Brunn, *Geschichte der griechischen Künstler*, ii, p. 743, Stuttgart, 1859). A somewhat similar glass vessel has also been found in Parma, but was inscribed on both sides:

¹ ENNIΩΝ
ΕΠΟΙΗ
CEN

MNHΘΗ
ΟΑΓΟΡΑ
ΖΝΩ (= μνη(σ)θῆ ὁ ἀγοράζ[ων])

¹ This form of the inscription occurs on a vessel in the South Kensington Museum.



FIG. 192. GLASS BASIN.

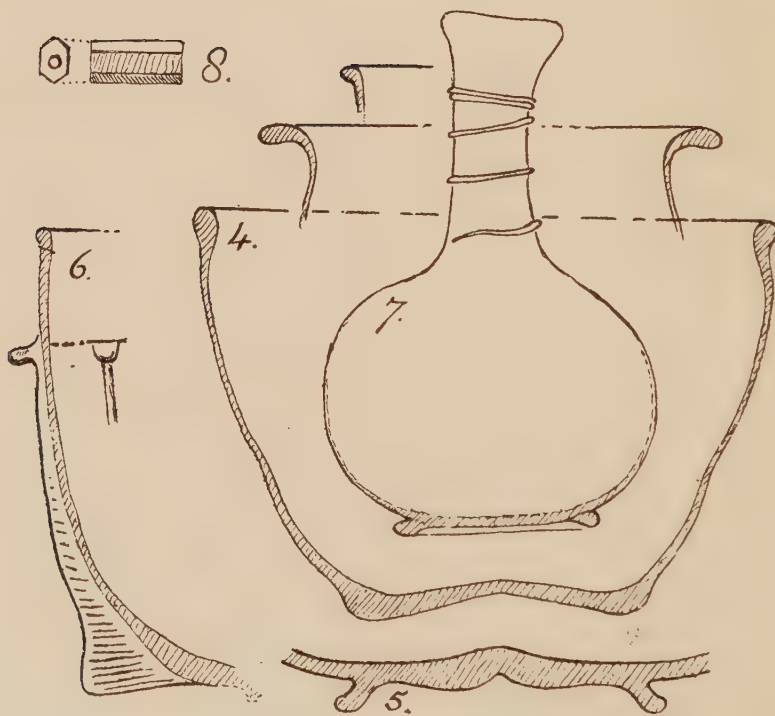


FIG. 193. GLASS VESSELS AND BEAD.

The upper part was decorated with a foliated border, but the lower showed paired upright lines like those upon our fragment. Cavedoni¹ refers the vessel to the Period of the Empire, but doubts whether Ennion was an Alexandrine or a Sidonian glass worker. The occurrence of this vessel at no great distance from Puteoli, the head-quarters of the Alexandrine trade, is a suggestive fact and may be one more bit of evidence of how widely spread Mediterranean trade must have been at this time. But it must also be remembered that glass-blowers, and perhaps even an Ennion amongst them, had transplanted their industry to Puteoli, where they occupied the *clivus vitrearius* or Street of the Glass-workers.

Light green glass. Diameter, 5 inches ; border, $1\frac{1}{2}$ inches high.

3. Glass basin.

Dark green glass. Diameter, 5 inches ; height, $3\frac{1}{4}$ inches.

4. Glass beakers.

Upper Baths.

Three, with thickened rims and bottoms : the largest measuring $3\frac{3}{4}$ inches in diameter.

5. Glass vessels.

Upper Baths.

The bottoms of three vessels ; one with kink in centre.

Diameter, about $2\frac{1}{4}$ inches.

6. Glass tumbler.

Upper Baths.

With upright fin decoration. Height, $3\frac{1}{8}$ inches ; diameter, 3 inches.

7. Glass bottle.

Upper Baths.

Neck with spirally coiled thread decoration.

8. Glass bead.

Lower Baths.

Hexagonal, perforated : deep blue colour.

Gilded glass.

While we were engaged in our survey of the site of Villa Bechi, we were shown some small oblong specimens of thin gilded glass ornamented with figures of animals, executed in gold-leaf and stuck on to the glass, which we were told had been found in the ruins. At the time we doubted their antiquity, but having since seen authentic specimens of work from Roman sites, we are now inclined to think that they may have been genuine specimens of ancient gilded glass.

Glass tesserae.

Single cubes of coloured glass may be picked up at many localities. Where they are found in considerable numbers they indicate the former existence of a decoration in *opus musivum* in the vicinity. The glass mosaic found *in situ*, forming the frontispiece of this book, has already been fully described.

The Colouring Matter in Green and Blue Mosaic Glass.

Green mosaic glass.

Some of the green glass used for the foliage of the glass mosaic described

¹ *Ann. de l'Inst. Corr. Archéol.* xvi, 1844, p. 161, Pl. d'Agg.

on p. 88 has been shown by Mr. J. J. Manley, *Analyses of Green and Blue Glass from the Posilipán Mosaic, Archaeologia*, lxiii, to owe its colour to a uranium salt in the proportion shown in the following table :

Composition of the green-tinted glass.

Silica	62.11 %
Iron oxide	2.70 %
Alumina	1.76 %
Lime	8.90 %
Magnesia	2.90 %
Uranium oxide	1.25 %
Potassium oxide	20.38 %
	100.00 %

The following are Mr. Manley's notes upon this glass :

'So far as we have been able to discover, there is no other recorded instance in which uranium has been detected in Roman glass ; and it is highly improbable that the maker was aware of its presence. We may almost certainly conclude that the use of a sand having uranium as one of its constituents was merely accidental. It is of course quite possible that the maker observed that by using sand from a particular locality he was able to manufacture a green-tinted glass which was more appreciated and sought after than the green glasses produced with the aid of other kinds of sand. If there is any truth in this conjecture, we should naturally expect to find other specimens of the same glass in the neighbourhood in which Mr. Günther found his. The discovery of the source of the uranious sand employed by the ancient glass-maker would be an interesting find, and possibly an important one too.

'Having completed the analysis, we thought it would be interesting to attempt on a small scale a synthesis of the glass ; the proper quantities of the various constituents were therefore weighed out, introduced into a platinum crucible, and suitably heated in a furnace. In due time we obtained a specimen of perfectly transparent green glass, quite unlike the original Roman glass, which was very opaque. We were naturally disappointed with the result, but in a short time we were so fortunate as to discover how the original glass might be as nearly as possible imitated. Some of the new glass had been broken into small pieces : it was decided to re-melt these with the object of producing one larger fragment. Re-introducing the small bits into the crucible, they were at first gently warmed in order to avoid decrepitation ; during this operation the lid of the crucible was not used, as it was desired to watch the progress of the melting of the glass. The gentle heating had been conducted for a short time only, when we observed the transparent fragments almost suddenly transformed into an opaque variety which presented the same general appearance as the original Roman glass ; and apparently the only characteristic which enabled us to distinguish between the new and the old glass was the absence of any "weathering" on the surface of the formed

This altogether unexpected discovery of a method whereby it was possible to effect the "ageing" of the glass, led us to infer that the Romans probably adopted a similar plan for rendering transparent glass opaque. When the temperature of the opaque fragments was raised to the melting-point of the glass, the transparent form was reproduced. It was thus found possible to transform either variety into the other, as often as might be desired.

'We next made a small portion of glass from which the uranium oxide was omitted; its green colour was, in our opinion, just a shade darker, but in other respects its general appearance was similar to that of the glass first made by us; the new glass was also as easily aged or rejuvenated as our first specimen.'

Blue mosaic glass.

The blue colour is due, as is usual, to the presence of cobalt oxide. 'The glass was coloured throughout its entire mass, and not "flashed". It was found that the cobalt oxide present in the glass was approximately equal to 4.2 per cent. The general composition of the glass was very similar to that already given for the green-tinted variety, and from a chemist's point of view calls for no further comment.'

OBJECTS OF METAL

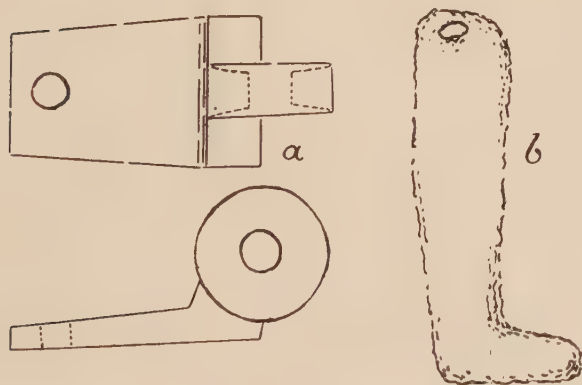


FIG. 194. BRONZE HINGE AND IRON HOOK.

Bronze hinge. Part of a bronze hinge was found in a flue of the Upper Baths. Although of the ordinary type of Pompeian hinges, it is of interest in that the upper and lower bearing surfaces are concave. Length, $2\frac{7}{8}$ inches.

Iron hook. Perhaps the hook of a cupboard door or chest lid. Length, $3\frac{1}{2}$ inches.

BONE

Several small pieces of bone veneer were found during the excavations of Signor Bechi, but only one small piece among those which we have seen bore any trace of decoration. The fragment, measuring 1 in. $\times \frac{7}{10}$ in. $\times \frac{1}{16}$ in. thick, was ornamented by a design of circular grooves well known on Roman comb-cases and toilet boxes and other similar articles.



FIG. 195.

COINS

a. Numerous silver and copper coins of the reigns of Macrinus (A.D. 217-218), and it is said of Justinian too (*circ.* A.D. 550), were found in the Odeon.

b. Drusus (A.D. 23). Cohen, *Monnaies*, No. 2, p. 131. Found by Mr. Nelson Foley below chamber γ , near the Upper Baths.

c. A denarius of Claudius Gothicus (A.D. 268-270) was found in the covered channel in the corridor J of the Baths of Hadrian.

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SCALE, 50 yds. to 1 inch.

IMPERIAL VILLA AND OF THE GAIOLA REGION.

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*List of Works on the Neapolitan Region by the
author.*

The Phlegraean Fields. *Geographical Journal*, 1897.

The Oyster Culture of the Ancient Romans.

Journal of the Marine Biological Association, 1897.

On the possibility of obtaining more reliable Measurements of
the Changes of the Land-Level of the Phlegraean Fields.

Scottish Geographical Magazine, 1900.

A possible new Petroleum Field near Naples. *Nature*, 1901.

Changes in the Level of the City of Naples.

Geographical Journal, 1904.

Contributions to the Study of Earth-movements in the Bay of
Naples. Loescher, Rome, and Parker, Oxford, 1904.

The Cimaruta. *Folklore*, 1905.

A Bibliography of Topographical and Geological Works on the
Phlegraean Fields. Royal Geographical Society, London, 1908.

A Mural Glass Mosaic from the Imperial Roman Villa near
Naples. *Archaeologia*, 1912.

